Series 1958, No. 9

Issued September 1961

SOIL SURVEY

Calhoun County Alabama

OUR SOIL ★ OUR STRENGTH

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
In cooperation with
ALABAMA DEPARTMENT OF AGRICULTURE AND INDUSTRIES
ALABAMA AGRICULTURAL EXPERIMENT STATION

HOW TO USE THE SOIL SURVEY REPORT

THIS SOIL SURVEY of Calhoun County will serve various groups of readers. It will help farmers in planning the kind of management that will protect their soils and provide good yields, and it will add to the knowledge of soil scientists.

In making this survey, soil scientists walked over the fields and woodlands. They dug holes and examined surface soils and subsoils; measured slopes with a hand level; noticed differences in growth of crops, weeds, and brush; and, in fact, recorded all the things about the soils that they believed might affect their suitability for farming, trees, wildlife, and related uses.

The scientists plotted the boundaries of the soils on aerial photographs. Then, cartographers prepared from the photographs the detailed soil map in the back of this report. Fields, woods, roads, streams, and many other landmarks can be seen on the map.

Locating soils

Use the index to map sheets to locate areas on the large map. The index is a small map of the county on which numbered rectangles have been drawn to show where each sheet of the large map is located. When the correct sheet of the large map is found, it will be seen that boundaries of the soils are outlined, and that there is a symbol for each kind of soil. All areas marked with the same symbol are the same kind of soil, wherever they appear on the map. The symbol will be inside the area if there is enough space; otherwise, it will be outside the area and a pointer will show where the symbol belongs.

Suppose, for example, an area located on the map has the symbol DsB3. The legend for the detailed map shows that this symbol identifies Dewey silty clay loam, 2 to 6 percent slopes, severely eroded. This soil and all others mapped in Calhoun County are described in the section Descriptions of the Soils.

Finding information

Few readers will be interested in all parts of the soil survey report, for it has special sections for different groups, as well as some sections of value to all. The sections General Nature of the Area and Agriculture will be of interest mainly to those not familiar with Calhoun County.

Farmers and those who work with farmers will be interested mainly in the sections General Soil Map, Descriptions of the Soils, and Use and Management of Soils. A study of these sections will aid them in identifying soils on a farm, in learning ways the soils can be managed, and in judging what yields can be expected.

Engineers can refer to the section Engineering Interpretations of Soils. The tables in this section show characteristics of the soils that affect engineering.

Soil scientists will find information about how the soils were formed and how they were classified in the section Formation and Classification of Soils.

Students, teachers, and other users will find information about soils and their management in various parts of the report, depending on their particular interest.

* * *

Farmers in Calhoun County have organized the Calhoun County Soil Conservation District. The district, through its board of supervisors, arranges for farmers to receive technical help from the Soil Conservation Service in planning good use and conservation of the soils on their farms. The survey furnishes some of the facts needed for this technical help. The soil survey map and report also are useful to foresters, land appraisers, credit agencies, and to others who are concerned with the use and management of land.

The Guide to Mapping Units and Capability Units at the end of the report will simplify the use of the map and the report. This guide gives the map symbol for each soil, the name of the soil, the page on which the soil is described, the capability unit in which the soil has been placed, and the page where the capability unit is described. Soil survey and engineering terms are defined in the Glossary in the back of the report.

Fieldwork for this survey was completed in 1958. Unless noted otherwise, all statements refer to conditions at the time of the survey.

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SOIL SURVEY OF CALHOUN COUNTY, ALABAMA

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REPORT BY WILLIAM V. HARLIN AND E. A. PERRY, SOIL CONSERVATION SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE IN COOPERATION WITH ALABAMA DEPARTMENT OF AGRICULTURE AND INDUSTRIES, AND ALABAMA AGRICULTURAL EXPERIMENT STATION

General Nature of the Area

Calhoun County is located in northeastern Alabama, near the Georgia State line. Distances from Anniston, the county seat, to other places in Alabama are shown on the back cover.

The county has an area of 610 square miles, or 390,400 acres. It is in an agricultural and industrial region. Cotton, corn, oats, hay, and livestock are the main agricultural products and the principal farm source of cash income. Cotton and corn have been the chief cash crops, but dairying and the production of beef cattle are becoming the main enterprises. Hay, oats, and some of the corn grown are used mainly to feed livestock on farms.

History of Calhoun County

Calhoun County was organized December 18, 1832 in territory ceded by the Creek Indians. It was known originally as Benton County (*6*)[1] and included parts of Cherokee, Cleburne, and Etowah Counties. The name was changed to Calhoun County in 1858 in honor of John C. Calhoun. Shortly thereafter, some of the original territory was given to Cleburne and Etowah Counties. The county seat was Jacksonville until 1903, at which time its headquarters were moved to Anniston.

The first settlement was in 1830 in the White Plains community. Other settlements were Alexandria, Choccolocco, and Blue Mountain. Early settlers came from Tennessee, Georgia, Virginia, and the Carolinas. They had gardens, grew cereals, and raised livestock mainly for their own use. By 1860, Calhoun County had become the leading cotton-producing area in Alabama.

Several railroads were built in the county after the end of the Civil War. These were the Tennessee and Alabama Rivers Railroad, and the Georgia and Pacific Railroad, now a part of the Southern Railway System, and the East and West Railroad, now part of the Seaboard Air Line Railroad. The Coosa River provided transportation to Rome, Ga., and to places south of there. River traffic was discontinued after the construction of Lock No. 4 in Talladega County and other power dams.

Transportation

Three railroads—The Seaboard Air Line, the Southern, and the Louisville and Nashville—cross the county and connect it with cities and markets in surrounding States. Several bus and truck lines and a scheduled air service also provide transportation to places outside the county.

Every community in Calhoun County can be reached from Anniston by paved or hard-surfaced road. U.S. Highways 78 and 431, which cross at Anniston; State Road 11 and U.S. 278, which cross at Piedmont; and many county roads connect Calhoun County with surrounding cities and counties.

Community Facilities

There are 6 high schools, 10 junior high schools, and 12 elementary schools in the county. All rural pupils living 1 mile or more from a school are transported by buses provided by the county school system. The cities of Anniston, Jacksonville, and Piedmont operate their own school systems. Jacksonville State Teachers College is located at Jacksonville.

Electricity and telephones are available for most rural homes in the county. Rural mail service is established throughout the county. Most communities have churches.

Wildlife

Quail, squirrels, doves, and rabbits are the most common game. Deer and wild turkeys are in the Talladega National Forest. Fishing is fairly good in the larger streams and in a number of private fish ponds (fig. 1). Bream and bass have been stocked in private ponds. Streams contain game fish and other fish.

Figure 1.—**Pond mainly on Rarden silty clay loam, shallow, 6 to 10 percent slopes, severely eroded. Such ponds can produce 300 to 500 pounds of fish per acre as well as furnish water for livestock.**

[1] Italic numbers in parentheses refer to Literature Cited, p. 95.

Deer hunting in the county is made possible through the protection provided by the Choccolocco Game Refuge in the Talladega National Forest.

Physiography and Relief

Calhoun County lies in the Ridge and Valley Province of the Appalachian Highlands except for a narrow strip along the eastern boundary which is in the Blue Ridge Province known locally as the Talladega Mountains. This area was mainly a nearly level plain gently inclined toward the northwest. Lateral pressure on the rock layers caused wrinkles, folds, and faults. The upward folding of rocks and the cutting of streams have formed a series of sharp ridges and valleys. Elevations range from 485 feet to more than 2,100 feet above sea level. On the basis of physiography and relief, the county is divided into four parts: (a) Rough mountains, (b) intermediate ridges, (c) lower ridges, and (d) valleys. The bedrock underlying each of these parts is described in the section Formation and Classification of Soils.

Water Supply

In most parts of the county, supplies of water for household and for livestock use are good. The pioneers generally settled near good springs. Springs could not supply enough water for the increasing population, however, and wells or cisterns were dug. Water in good supply is hard to find in the limestone valleys, especially on the chert ridges. Shallow wells were once common, but they have gone dry during the droughts. Consequently, most wells are now drilled to depths ranging from 70 to 150 feet.

In recent years many farmers have constructed ponds to supplement the water supply and to provide fishing. More than 400 fish and stock ponds are in Calhoun County, according to reports of the Calhoun County Soil Conservation District.

Many of the springs used by the pioneers are still in use. Coldwater Spring, having an estimated flow of 24 to 36 million gallons per day, furnishes water for Anniston, Oxford, Blue Mountain, Hobson City, the Anniston Ordnance Depot, Fort McClellan, and other users throughout the southern part of Calhoun County. Jacksonville and Ohatchee obtain their water from two large springs. Piedmont uses water from Terrapin Creek, and Weaver uses water from two drilled wells.

Drainage

The entire county is drained by the Coosa River and its tributaries. This river flows in a southwesterly direction, and it forms the western boundary of Calhoun County. Terrapin Creek, a tributary of the Coosa River, flows across the northeastern part of the county and furnishes water for Piedmont. Nances Creek drains the area around Piedmont. Choccolocco and Coldwater Creeks drain the eastern and southern parts of the county. Ohatchee, Tallahatchee, and Cane Creeks are also tributaries of the Coosa River.

General Soil Map

As we study or map the soils of Calhoun County, it is fairly easy to see differences as one travels from place to place. There are many obvious differences in the appearance of streams, in the width of bordering valleys, in the kinds of plants, and in the agriculture. Less noticeable are the differences in the pattern of soils.

Nevertheless, a map of the general soil areas can be made by drawing lines around the different patterns of soils. Topographic position, slope, parent material, and drainage are some of the characteristics used in separating the general soil areas. General soil areas are named for the dominant soils. The six general soil areas in the county, also called soil associations, are shown on the colored map in the back of the report.

The general soil map is not suitable for farm planning, but it is useful to those who want only a general idea of the soils, who want to compare different parts of the county, or who want to make county-wide interpretations. The discussion of each general soil area follows. The relationship of some of the general soil areas, or associations, to topographic position and parent material is shown in figure 2.

General Soil Area 1

General soil area 1 consists of well drained and moderately well drained soils on level to moderately steep terraces and foot slopes. The dominant soils are the Altavista, Masada, and Tate. This soil area occurs along Choccolocco Creek and the foothills of Talladega Mountain. It makes up about 3 percent of the county. Most of the soils are silt loam, but some are fine sandy loam, gravelly silt loam, and gravelly silty clay loam.

The Altavista and Masada soils make up about 30 percent of the soil area; the Tate, about 20 percent; and the Philo and Stendal, about 18 percent. Minor soils make up the rest.

The Altavista and Masada soils have developed from old general alluvium that washed from Talladega slate containing some sandstone and shale. Their subsoils are yellowish-brown and yellowish-red silty clay loam. The Tate soils have developed from old local alluvium that washed from Talladega slate or from mica schist and phyllite. They occur on stronger slopes and have a yellowish-red, light silty clay loam subsoil.

The minor soils are the well drained Georgeville, developed from the residuum of Talladega slate; the poorly drained Purdy and Robertsville, developed from old general alluvium on stream terraces; the moderately well drained Philo, and the poorly drained Atkins, all developed from recent alluvium in valleys.

Most of the farms in this general soil area are owned by full-time operators and are fairly large, well managed, and moderately productive. They are mostly of the general type, but there are a few large beef-cattle farms. About 40 percent of this general soil area is in capability class II. Most of the acreage is cultivated or pastured.

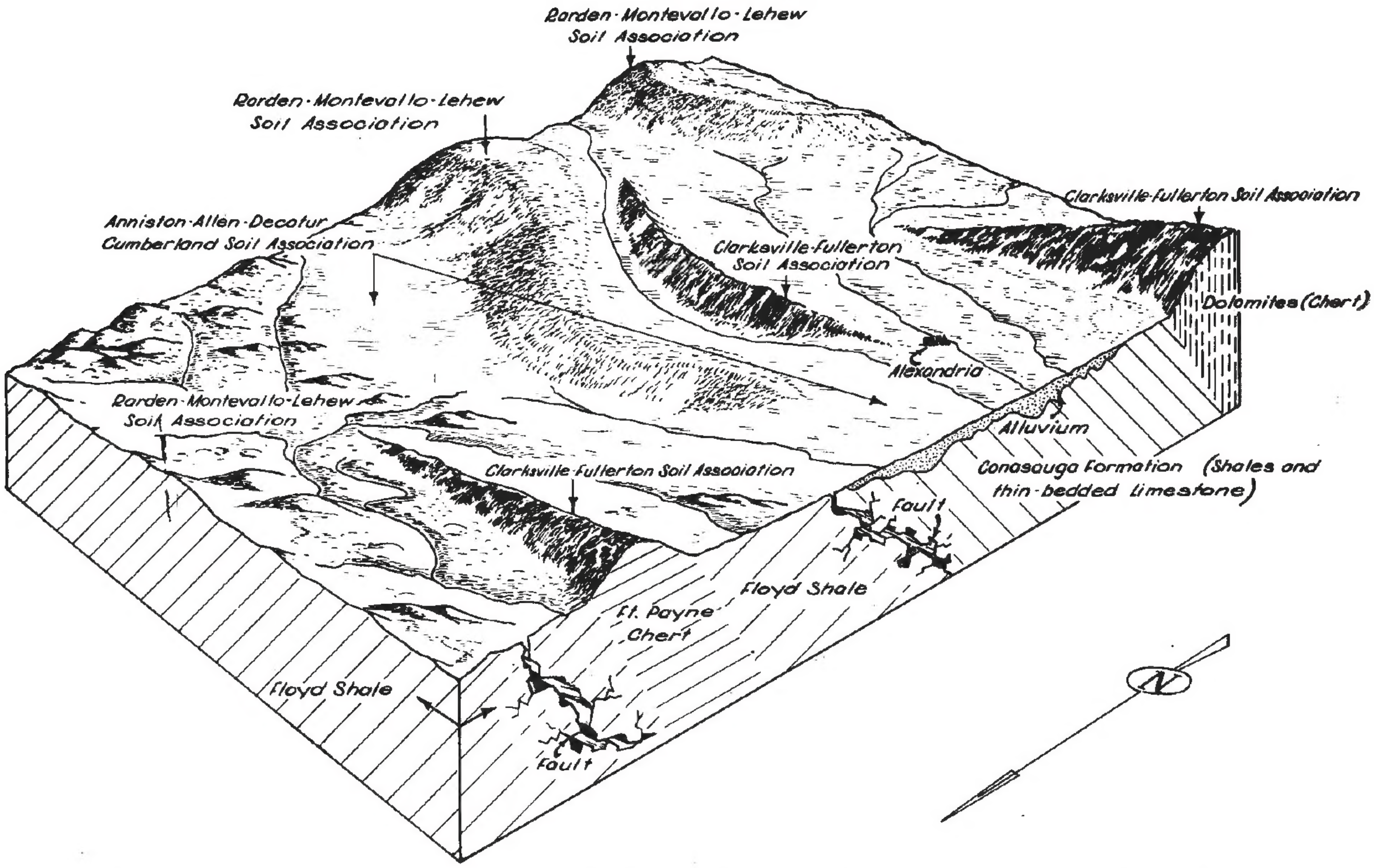

Figure 2.—**Some of the general soil areas, or soil associations, in relation to topographic position and parent material.**

General Soil Area 2

General soil area 2 consists of deep, well-drained, level to moderately steep soils in valleys underlain by limestone and shale. The dominant soils are the Anniston, Allen, Decatur, and Cumberland. This soil area is in the Alexandria and Choccolocco Valleys near Piedmont, in two small places in the southwestern part of the county, and in one place in the northern part. It makes up about 25 percent of the county. Most of the soils are gravelly loam, loam, silt loam, and silty clay loam, but some are stony loam.

The Anniston and Allen soils make up about 26 percent of the general soil area; the Dewey, about 7 percent; the Decatur and Cumberland, about 26 percent; and all minor soils, about 41 percent.

The Anniston and Allen soils have developed from old local alluvium that washed from sandstone and shale. They occur on the foot slopes of Choccolocco Mountain and other mountains. Their subsoils are red to dark-red fine sandy clay to clay loam. The Decatur and Cumberland soils have developed in thick beds of old general alluvium or in the residuum from limestone. Their subsoils are dark-red silty clay or clay.

The minor soils are the well drained Dewey and Etowah, the moderately well drained Captina, the somewhat poorly drained Taft, and the poorly drained Robertsville. These soils developed on uplands or stream terraces. The other minor soils are the well drained Huntington, local alluvium phase, the moderately well drained Lindside and Philo, and the poorly drained Melvin.

Most of the farms in this general soil area are small, well managed, and productive and are owned by full-time operators. They are mainly of the general type, but a few are dairy and beef-cattle farms. Cotton and corn are the main crops (fig. 3); vegetables are grown for home use.

About 65 percent of the general soil area is in capability classes I, II, and III. The rest is in classes IV and VII. Most of the old iron mines in Calhoun County are in this general soil area.

General Soil Area 3

General soil area 3 consists of well drained to moderately well drained, stony or cherty soils on ridgetops and steep slopes and in local alluvium on foot slopes or in draws. The dominant soils are the Clarksville and Fullerton. This soil area occurs in the southwestern part of the county. Large areas are in the Anniston Ordnance Depot and in the vicinity of Duke School. About 28 percent of the county is in this general soil area. Most of the soils are stony loam and cherty silt loam, but some are silt loam and gravelly fine sandy loam.

The Clarksville-Fullerton stony loams make up about

Figure 3.—**Cotton and corn growing on Decatur and Cumberland loams, 0 to 2 percent slopes. The yield of lint is estimated to be 550 pounds per acre.**

50 percent of this general soil area; Fullerton soils, 15 percent; Clarksville, about 13 percent; Lobelville, 1 percent; and the Landisburg and Lee soils together, about 21 percent.

The Clarksville and Fullerton undifferentiated soils have developed from the residuum of cherty limestone. The Clarksville soils have a light yellowish-brown to strong-brown, faintly mottled cherty silty clay loam subsoil. The Fullerton have a red to yellowish-red cherty silty clay loam to silty clay subsoil.

The minor soils are the moderately well drained Landisburg, which occupy foot slopes between the uplands and recently deposited alluvium, the somewhat poorly drained Lobelville, and the poorly drained Lee soils. The latter two soils have developed in narrow valleys from recent general alluvium and local alluvium.

In this general soil area, most of the farms are small, moderately well managed, crop-and-livestock farms. About half of the farms are operated full time and the rest part time. Cotton and corn are the main row crops; vegetables are grown for home use.

More than 60 percent of the area is in capability classes VI and VII. Most of the chert pits and bauxite mines are in this general soil area. Paper companies have purchased a large acreage for conversion to woodland. The U.S. Government owns several square miles of land.

General Soil Area 4

General soil area 4 consists of moderately deep or shallow soils on ridgetops and steep slopes and in local alluvium in draws. The major soils are the Rarden, Montevallo, and Lehew. This general soil area makes up about 17 percent of the county and is mainly in the northern and western parts. Most of the soils are silt loam, but some are shaly silt loam and gravelly loam or fine sandy loam.

The Rarden soils make up about 40 percent of the general soil area; Montevallo, 28 percent; Lehew-Montevallo complexes, 10 percent; and the Camp, Cane, Locust, Enders, Atkins, and Stendal soils together, about 22 percent.

The Rarden, Montevallo, and Lehew soils have developed from the residuum of shale and fine-grained, platy sandstone or limestone. The Rarden soils are moderately well drained, and the Montevallo and Lehew are well drained. The Rarden soils have a yellowish-red silty clay or clay subsoil mottled with strong brown. The Montevallo have a yellowish-brown shaly silt loam subsoil. The Lehew soils are weak-red shaly loam throughout the solum.

The minor soils are the well drained Camp and Enders, the moderately well drained Cane and Locust, and the poorly drained Atkins. Of these, the Enders are on uplands; the rest are in narrow valleys and have developed from local and general alluvium.

Most of the farms in this general soil area are fairly large, are somewhat poorly managed, and have low productivity. They are generally owned by part-time operators. Cotton or corn is grown in small, scattered fields. A few beef-cattle farms are in the area.

About 50 percent of the area is in capability classes III and IV; the rest is in classes VI and VII. Most of the acreage is idle or in second-growth pine.

General Soil Area 5

General soil area 5 consists of well-drained soils on stream terraces underlain by sand, gravel, and clay. The major soils are the Sequatchie, Holston, and Nolichucky. This general soil area makes up about 2 percent of the county and is mainly along the Coosa River in the southwestern part. The broad, gently sloping stream terraces on which it occurs are dissected by steep-walled drains and valleys. Most of the soils are fine sandy loam; some are gravelly.

The Sequatchie, Holston, and Nolichucky soils are well drained, and they have developed from thick beds of general alluvium that has washed from sandstone and shale. The Sequatchie soils occupy the lower stream terraces. They have a brown to reddish-brown fine sandy clay loam subsoil. The Holston soils occupy higher terraces. They have a strong-brown to yellowish-brown fine sandy clay loam subsoil. The Nolichucky soils are on the stronger slopes. Their subsoil is red fine sandy clay loam.

The minor soils are the Montevallo, the well drained Pope, the moderately well drained Philo, and the poorly drained Atkins. The Montevallo are on escarpments between the stream terraces and the valleys. The others are in narrow valleys and have developed from alluvium.

In this general soil area, most of the farms are small, productive, well managed, and owned by full-time operators. They are mostly general farms, but a few are dairy farms. Cotton and corn are the main row crops. Sequatchie soils cover about 50 percent of the area; Holston soils, 25 percent; Nolichucky, 5 percent; Montevallo, 2 percent; and the Pope, Philo, Stendal, and Atkins together, 18 percent.

More than 70 percent of the area is in capability classes I and II, and most of the land is in cultivation or pasture. Some of the large sand and gravel pits of the county are in this area.

General Soil Area 6

General soil area 6 consists of shallow, steep, and stony soils underlain by sandstone, limestone, and Talladega slate. The major mapping units are Stony rough lands. This general soil area occurs on broad, steep uplands dissected by steep-walled drains. The largest area is on the Choccolocco and Coldwater Mountains that lie northeast and southwest of Anniston. This general soil area makes up about 22 percent of the county.

The dominant land types in this general area consist of soil material that is well drained, stony, and shallow and is developing from the residuum of limestone, sandstone, and slate. These are Stony rough land, limestone (2 percent of the area), Stony rough land, sandstone (52 percent of the area), and Stony rough land, slate (21 percent of the area).

Stony rough land, limestone, consists mainly of soil material and fragments of limestone that range from 3 inches to several feet in diameter. It occupies the lower one-third of mountain slopes or lower isolated positions, and in many places it is covered by stony alluvium from higher slopes. Stony rough land, sandstone, consists mainly of sandy soil material and fragments of sandstone ranging from 3 inches to several feet in diameter. It occurs on the Choccolocco and Coldwater Mountains, both of which are capped with Weisner quartzite. Stony rough land, slate, consists of soil material and fragments of slate or quartz that range from 3 inches to more than 4 feet in diameter. It is mainly on the northern slope of Talladega Mountain.

The minor soils make up about 25 percent of this general soil area. They are the well-drained Linker and Muskingum that have developed in residuum of sandstone and shale and the stony, colluvial Jefferson, Anniston, and Allen soils.

More than 90 percent of this area is in capability class VII, and most of the acreage is wooded. Nearly all land is owned by mining and paper companies, the U.S. Army, and the U.S. Forest Service. Some old mines and quarries are located in this area.

Use and Management of Soils[2]

In this section the soils of Calhoun County are grouped into capability classes, subclasses, and units. The use and management of each unit are discussed. In addition, the estimated yields of crops and pasture under two levels of management are given in table 1.

[2] M. E. Holt, management agronomist, SCS, assisted in the preparation of this section.

Capability Groups of Soils

Capability grouping is a system of classification used to show the relative suitability of soils for crops, grazing, forestry, and wildlife. It is a practical grouping based on the needs and limitations of the soils, the risks of damage to them, and also their response to management. There are three levels above the soil mapping unit in this grouping. They are the capability unit, subclass, and class.

The capability unit, which can also be called a management group of soils, is the lowest level of capability grouping. A capability unit is made up of soils similar in kind of management needed, in risk of damage, and in general suitability for use.

The next broader grouping, the subclass, is used to indicate the dominant kind of limitation. The letter symbol "e" indicates that the main limiting factor is risk of erosion if the plant cover is not maintained; "w" means excess water that retards plant growth or interferes with cultivation; and "s" shows that the soils are shallow, droughty, or unusually low in fertility. In some parts of the country there is another subclass, "c", for the soils that are limited chiefly by a climate that is too cold or too dry.

The broadest grouping, the land capability class, is identified by Roman numerals. All the soils in one class have limitations and management problems of about the same degree, but they are of different kinds as shown by the subclass. All the land classes except class I may have one or more subclasses.

In classes I, II, and III are soils suitable for annual or periodic cultivation of annual or short-lived crops.

Class I soils are those that have the widest range of use and the least risk of damage. They are level, or nearly level, productive, well drained, and easy to work. They can be cultivated with almost no risk of erosion and will remain productive if managed with normal care.

Class II soils can be cultivated regularly, but they do not have quite so wide a range of suitability as class I soils. Some class II soils are gently sloping; consequently, they need moderate care to prevent erosion. Other soils in class II may be slightly droughty or slightly wet, or somewhat limited in depth.

Class III soils can be cropped regularly but have a narrower range of use. These need even more careful management.

In class IV are soils that should be cultivated only occasionally, or they can be cultivated for some crops under very careful management.

In classes V, VI, and VII are soils that normally should not be cultivated for annual or short-lived crops, but they can be used for pasture or range, for wildlife, or as woodland.

Class V soils are nearly level and gently sloping, but they are droughty, wet, low in fertility, or otherwise unsuitable for cultivation. No soils in Calhoun County were placed in class V.

Class VI soils are not suitable for cultivated crops because they are steep, shallow, droughty, or otherwise limited. Some soils in class VI can, without damage, be cultivated enough so that fruit trees or forest trees can be set out or pasture crops seeded.

Class VII soils have characteristics that limit their use largely to grazing, woodland, or wildlife.

In class VIII are soils that have practically no agricultural use. Some of them have value as watersheds, as wildlife habitats, or as recreational areas. No soils in Calhoun County have been placed in class VIII.

The capability classes, subclasses, and capability units in Calhoun County are given in the following list.

Class I.—Soils that have few limitations that restrict their use. These soils are suitable for intensive use under good farming practices that will maintain organic matter and fertility.
- Unit I-1: Deep, well-drained, friable, easily worked soils; slopes of 0 to 2 percent.
- Unit I-2: Deep, well-drained, friable silt loam on local alluvium; slopes of 0 to 2 percent.

Class II.—Soils that have some limitations that reduce the choice of plants or require moderate conservation practices.
- Subclass IIe: Soils slightly to moderately eroded.
  - Unit IIe-1: Eroded, deep, well-drained, friable, easily tilled soils; slopes of 2 to 6 percent.
  - Unit IIe-2: Eroded to slightly eroded, moderately deep to deep, well-drained, friable, easily tilled, fine sandy loam and gravelly fine sandy loam soils; slopes of 2 to 6 percent.
  - Unit IIe-3: Slightly eroded to eroded, deep, well-drained, friable cherty silt loam soils; slopes of 2 to 6 percent.
  - Unit IIe-4: Slightly eroded to eroded, moderately well drained to well drained, moderately deep to deep, friable to firm soils; slopes of 2 to 6 percent.
  - Unit IIe-5: Slightly eroded to eroded, moderately deep to deep, moderately well drained, friable soils with fragipans; slopes of 0 to 6 percent.
- Subclass IIw: Soils moderately limited by excess water.
  - Unit IIw-1: Deep, well-drained, friable soils on flood plains; slopes of 0 to 6 percent.
  - Unit IIw-2: Moderately deep to deep, moderately well drained to well drained, friable soils subject to occasional overflow; slopes of 0 to 2 percent.

Class III.—Soils that have severe limitations that reduce the choice of plants or require special conservation practices, or both.
- Subclass IIIe: Soils slightly to severely eroded.
  - Unit IIIe-1: Eroded and severely eroded, deep, well-drained, friable soils; slopes of 2 to 10 percent.
  - Unit IIIe-2: Eroded, deep, well-drained, friable, fine sandy loam and gravelly fine sandy loam soils; slopes of 6 to 10 percent.
  - Unit IIIe-3: Slightly eroded to eroded, deep to moderately deep, well-drained, friable, cherty silt loam soils; slopes of 6 to 10 percent.
  - Unit IIIe-4: Eroded to severely eroded, well-drained, deep, friable to firm soils; slopes of 2 to 10 percent.
  - Unit IIIe-5: Slightly eroded, moderately deep, moderately well drained, friable soils with fragipans; slopes of 6 to 10 percent.
  - Unit IIIe-6: Eroded, moderately deep to shallow, moderately well drained to well drained soils with mottled, plastic silty clay or clay subsoils; slopes of 2 to 10 percent.
- Subclass IIIw: Soils limited by excess water.
  - Unit IIIw-1: Somewhat poorly to moderately well drained, deep, friable soils on flood plains; slopes of 0 to 2 percent.
  - Unit IIIw-2: Somewhat poorly drained, moderately deep, friable, stream-terrace soils with fragipans; slopes of 0 to 2 percent.

Class IV.—Soils that have very severe limitations that restrict the choice of plants, require very careful management, or both.
- Subclass IVe: Soils slightly to severely eroded.
  - Unit IVe-1: Eroded to severely eroded, well-drained, deep, friable soils; slopes of 6 to 25 percent.
  - Unit IVe-2: Slightly to severely eroded, deep, well-drained, friable, cherty or gravelly soils; slopes of 6 to 15 percent.
  - Unit IVe-3: Eroded or severely eroded, moderately deep or shallow, moderately well drained to well drained soils; slopes of 2 to 10 percent.
  - Unit IVe-4: Stony, deep to moderately deep, well-drained, friable soils; slopes of 0 to 10 percent.
- Subclass IVw: Wet soils.
  - Unit IVw-1: Poorly drained, deep to moderately deep soils subject to frequent overflow or ponding; slopes of 0 to 2 percent.

Class VI.—Soils that have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture or range, woodland, or wildlife food and cover.
- Subclass VIe: Soils slightly to severely eroded.
  - Unit VIe-1: Eroded to severely eroded, deep, well-drained, friable soils; slopes of 6 to 25 percent.
  - Unit VIe-2: Stony, well-drained, deep or shallow, friable soils; slopes of 10 to 25 percent.
  - Unit VIe-3: Slightly eroded to severely eroded, shallow, well-drained, friable soils; slopes of 6 to 15 percent.

Class VII.—Soils that have very severe limitations that make them unsuited to cultivation and that restrict their use largely to grazing, woodland, or wildlife.
- Subclass VIIe: Soils slightly to severely eroded.
  - Unit VIIe-1: Slightly to severely eroded well-drained, moderately deep to deep, friable soils and gullied land; slopes of 10 to 40 percent.

Unit VIIe–2: Shallow or stony, well-drained, friable soils; slopes of 10 percent or more.

Descriptions of capability units

In this section each capability unit is described and the soils in it are listed. In addition, suggestions are given for the use and management of the soils in each unit.

The soils in each unit have many similarities. Distinctive characteristics that affect the use and management of particular soils are given with the descriptions of some units. The need of the soils in each unit for lime and plant nutrients depends on past management and cropping practices. Consequently, lime and fertilizer should be applied according to soil tests, which can be made by the Soil Testing Laboratory at Auburn, Ala.

Recommendations on crop varieties and pasture-seeding mixtures can be obtained from publications of the Alabama Agricultural Experiment Station. The Agricultural Extension Service and the Soil Conservation Service can help interpret the recommendations for the soils on individual farms. They also can give technical assistance on land preparation, cropping systems, terracing, drainage, forestry, pasture management, and other farm problems.

Capability Unit I–1

This unit consists of deep, well-drained, medium to strongly acid, friable soils, which have developed in old local alluvium on uplands and stream terraces. The Sequatchie soil is more permeable and more easily tilled than the other soils. The other soils are moderately permeable to water and roots to a depth of several feet. All the soils are fertile, and they have a moderate to high capacity to hold available moisture. The soils in this unit are:

Anniston and Allen gravelly loams, 0 to 2 percent slopes.
Decatur and Cumberland loams, 0 to 2 percent slopes.
Etowah silt loam, 0 to 2 percent slopes.
Sequatchie fine sandy loam, 0 to 2 percent slopes.

About two-thirds of the acreage is cultivated. Crops suited to these soils are cotton, corn, sorghum, soybeans, small grains, and truck crops (fig. 4). Alfalfa and most legumes and grasses are also suited.

Figure 4.—**Corn on Decatur and Cumberland loams, 0 to 2 percent slopes. Yields of 45 to 75 bushels per acre can be obtained if management is good.**

A good cropping system is 2 years of row crops followed by 1 year of small grain or a sod crop. Continuous row crops followed by winter or summer cover crops are satisfactory if all crop residue is returned to the soil. These soils need comparatively low amounts of fertilizer, but they respond well to it. Most legumes and many of the grasses and row crops respond well to lime.

These soils have good tilth, which can be easily maintained. Tillage can be performed within a wide range of moisture conditions. Runoff can be controlled by use of good cropping systems and good management of crop residues.

Capability Unit I–2

The soil in this unit is strongly to very strongly acid, well drained, and friable. It is developing in local alluvium that has washed chiefly from soils developed from high-grade limestone. It is commonly in depressional areas at the heads of and along small drainageways and draws. It is subject to ponding for a short time in periods of heavy or prolonged rainfall. The structure is weak, but the soil is permeable to water, air, and roots. The capacity for available moisture is high. Overwash from higher areas sometimes damages small plants. The soil in this unit is:

Huntington silt loam, local alluvium, 0 to 2 percent slopes.

About two-thirds of the acreage is cultivated. The crops suited to the soil are corn, sorghum, cotton, soybeans, small grains, truck crops, and most legumes and grasses. They should be grown in a cropping system that consists of 1 year of a close-growing crop followed by 2 years of row crops. Row crops can be grown continuously if they are followed by winter cover crops and all residue is returned to the soil.

Most areas are responsive to fertilizer, but needs are comparatively low. Most legumes and many other crops respond well to additions of lime. Good tilth is easily maintained; moisture relations are favorable for tillage. Water, temporarily ponded on some areas during wet seasons, delays tillage.

Runoff is not a serious problem. It can be adequately controlled by use of good cropping systems and proper use of crop residues. Surface drainage may be needed on some areas.

Capability Unit IIe-1

The soils in this unit are deep, friable, well-drained loams, silt loams, and gravelly loams. Slopes are 2 to 6 percent. These soils are medium to strongly acid. They have developed from old alluvium on uplands and stream terraces. A large part of the original surface soil has been lost through erosion. These soils have good structure and a silty clay or clay loam subsoil. They are moderately permeable to water, air, and roots to depths of several feet. The capacity to hold available moisture is moderate to high. Runoff is a moderate hazard. Natural fertility is moderate, and supplies of organic material are low. The soils in this unit are:

- Anniston and Allen gravelly loams, 2 to 6 percent slopes, eroded.
- Cumberland gravelly loam, 2 to 6 percent slopes, eroded.
- Decatur and Cumberland loams, 2 to 6 percent slopes, eroded.
- Etowah silt loam, 2 to 6 percent slopes, eroded.

About half of the acreage is in cultivation. The crops suitable for these soils are cotton, corn, soybeans, sorghum, small grains, truck crops, and most legumes and grasses. An adequate cropping system for the soils in this unit consists of 1 year of a reseeding legume allowed to seed, followed by 3 years of row crops. Also suitable is 1 year of grass or a small grain followed by 2 years of row crops.

These soils need moderate to moderately large quantities of all plant nutrients, lime, and organic matter; alfalfa needs boron. The response to fertilizer is good. High productivity is easily maintained if management is good.

These soils have good tilth, which is easily maintained. They can be tilled within a wide range of moisture conditions. Gravel in the surface soil interferes with tillage to some extent.

Contour tillage and the use of terraces and vegetated waterways are needed to control water on the stronger slopes. A suitable cropping system and good utilization of crop residue help to control runoff on all slopes.

Capability Unit IIe-2

The soils in this unit are well-drained, moderately deep to deep, friable gravelly fine sandy loams and fine sandy loams. Slopes are 2 to 6 percent. These soils are strongly acid. About 50 percent of the original surface soil has been lost through erosion. The soils have developed on stream terraces, fans, or foot slopes. The subsoil is gravelly fine sandy clay loam or fine sandy clay loam. Bedrock is at depths ranging from 2½ to 6 feet. These soils have good structure, and they are permeable to water, air, and roots. Their capacity to hold available moisture is moderate. The rate of infiltration is high. Runoff is a moderate hazard. Natural fertility and the supply of organic matter are low. The soils in this capability unit are:

- Holston fine sandy loam, 2 to 6 percent slopes, eroded.
- Jefferson gravelly fine sandy loam, 2 to 6 percent slopes, eroded.
- Nolichucky gravelly fine sandy loam, 2 to 6 percent slopes, eroded.
- Sequatchie fine sandy loam, 2 to 6 percent slopes.
- Sequatchie fine sandy loam, 2 to 6 percent slopes, eroded.
- Sequatchie gravelly fine sandy loam, 2 to 6 percent slopes, eroded.

About two-thirds of the acreage is cultivated. The crops suitable for these soils are cotton, corn, soybeans, sorghum, small grains, truck crops, and most legumes and grasses. A cropping system consisting of 1 year of a reseeding legume allowed to seed, followed by 3 years of row crops, is suitable. One year of a small grain or grass followed by 2 years of row crops is also suitable.

These soils need large quantities of all plant nutrients, lime, and organic matter. They respond well to good management, including the proper use of fertilizer and lime. The tilth of these soils is good, and it is easily maintained. Tillage can be performed within a wide range of moisture conditions. Gravel interferes with tillage to some extent.

Contour tillage and the use of terraces and vegetated waterways are necessary on the stronger slopes. A good cropping system and proper use of crop residue are needed to control runoff on all slopes.

Capability Unit IIe-3

The soils in this capability unit are well-drained, moderately deep to deep, friable cherty silt loams on slopes of 2 to 6 percent. They occur on ridgetops and colluvial foot slopes. The parent material is chiefly cherty limestone. Some of the original surface layer has been lost through erosion. All the soils of this unit are moderately permeable to water, air, and roots. They are slightly droughty. The capacity to hold available moisture is moderate to low. Runoff is a moderate hazard. Natural fertility and the supply of organic matter are low. The soils in this unit are:

- Clarksville cherty silt loam, 2 to 6 percent slopes.
- Fullerton cherty silt loam, 2 to 6 percent slopes.
- Minvale cherty silt loam, 2 to 6 percent slopes, eroded.

About half of the acreage is cultivated. The crops suited to these soils are cotton, corn, small grains, soybeans, sweet sorghum, grain sorghum, truck crops, and many grasses and legumes.

A good cropping system consists of 1 year of rescuegrass, a small grain or other close-growing crop, and 2 years of row crops.

The soils need moderately large amounts of plant nutrients, lime, and organic matter, and they respond well to these amendments.

Tillage should be avoided when the soils are wet, especially in the more eroded areas. Chert interferes with tillage. Contour tillage, terraces, and vegetated waterways are needed to control runoff on the stronger slopes. A good cropping system and proper use of crop residue are needed on all slopes.

Capability Unit IIe-4

This unit consists of moderately deep to deep, moderately well drained to well drained soils. They occur on upland foot slopes and stream terraces on slopes of 2 to 6 percent. All have a well-developed profile and are strongly to very strongly acid. About 50 percent of the original surface soil has been lost through erosion. Structure is good in all soils except the Camp. It is weak in this soil.

The soils in this unit are moderately permeable to water, air, and roots. The capacity to hold available

moisture is moderate. Runoff is a moderate hazard. Natural fertility and the supply of organic matter are low. The soils in this unit are:

Altavista and Masada silt loams, low terraces, 2 to 6 percent slopes, eroded.
Camp silt loam, 2 to 6 percent slopes.
Enders gravelly fine sandy loam, 2 to 6 percent slopes, eroded.
Tate gravelly silt loam, 2 to 6 percent slopes, eroded.

About half the acreage is cultivated. Suitable crops for these soils are corn, cotton, small grains, sorghum, soybeans, truck crops, and many grasses and legumes. These should be grown in a cropping system that consists of 1 or 2 years of a sod crop followed by 2 years of row crops.

These soils need moderately large quantities of all plant nutrients, lime, and organic matter. They respond well to these amendments. Tilth is good, and it can be maintained without difficulty. Gravel interferes somewhat with tillage.

Contour tillage and the use of terraces and vegetated waterways are needed to control runoff on the stronger slopes. A good cropping system and the proper use of crop residue are needed on all slopes.

Capability Unit IIe 5

This capability unit consists of moderately deep to deep, moderately well drained, friable soils with fragipans. Slopes range from 0 to 6 percent. These soils have developed from old alluvium on foot slopes and stream terraces. Most of them have lost from 25 to 75 percent of their original surface soil through erosion. The structure of these soils is fairly good. The surface soil and upper subsoil are moderately permeable and generally well drained. In wet seasons, however, they become waterlogged. The lower subsoil is compact, slowly permeable, and generally heavier than the upper subsoil. It is mottled—an indication of poor drainage. The Cane and Captina soils are somewhat better drained than the other soils in this unit. Surface runoff is a moderate hazard except on the soils with slopes of 0 to 2 percent. The soils in this capability unit are:

Cane fine sandy loam, 2 to 6 percent slopes, eroded.
Captina silt loam, 0 to 6 percent slopes.
Captina silt loam, 2 to 6 percent slopes, eroded.
Landisburg cherty silt loam, 2 to 6 percent slopes, eroded.
Locust gravelly fine sandy loam, 0 to 2 percent slopes.
Locust gravelly fine sandy loam, 2 to 6 percent slopes, eroded.
Monongahela loam, 0 to 2 percent slopes.
Monongahela loam, 2 to 6 percent slopes, eroded.

About half of the acreage is cultivated. Suitable crops on these soils are corn, cotton, small grains, sorghum, soybeans, some truck crops, and many grasses and legumes. Crops should be grown in a system that consists of 1 or 2 years of a close-growing crop followed by 2 years of row crops.

These soils need moderately large quantities of all plant nutrients, lime, and organic matter. They respond well to these amendments, particularly to fertilizer and organic matter. They have fairly good structure, which can be maintained without difficulty. Tillage can be performed best within a somewhat narrow range of moisture content. Gravel and chert in some types interfere with tillage.

Contour tillage and the use of terraces and vegetated waterways are necessary to control runoff on the stronger slopes. A good cropping system and proper use of crop residue are needed on all slopes.

Capability Unit IIw–1

This capability unit consists of well-drained, deep, friable soils on first bottoms having slopes of 0 to 2 percent. These soils are strongly to very strongly acid. The surface soil ranges from fine sandy loam to silt loam and light silty clay loam. The soils have little structure, but they are moderately permeable to water and roots to depths of several feet. The capacity to hold available moisture is high. Flooding is common during long periods of rain, which normally occur late in winter and early in spring. Crops are occasionally damaged by floods. Floodwaters sometimes deposit silt and supply plant nutrients, but in a few places scouring is a hazard. Natural fertility and supplies of organic matter are high. The soils in this capability unit are:

Pope fine sandy loam, 0 to 2 percent slopes.
Pope silt loam, 0 to 2 percent slopes.

Approximately half the acreage is cultivated. The crops suitable for these soils are corn, cotton, soybeans, small grains, sorghum, some truck crops, and many legumes and grasses, especially whiteclover and fescue. A good cropping system consists of 1 year of a sod crop followed by 2 years of row crops. Continuous row crops followed by winter cover crops are an adequate but less suitable cropping system if all crop residues are left on the soil.

Large quantities of lime and moderate amounts of all plant nutrients and organic matter are needed by these soils. The response to these amendments is good. These soils have good tilth, which can be easily maintained. Runoff is not a serious hazard, because of the gentle slopes. Maximum use should be made of close-growing crops for winter cover to prevent scouring by floods that commonly occur.

Capability Unit IIw-2

In this unit are friable, deep to moderately deep, moderately well drained to well drained soils on low terraces. Slopes range from 0 to 2 percent. The texture of the surface soil generally is silt loam, but in some places it is fine sandy loam. The subsoil is silty clay loam. These soils have good structure. They are moderately permeable to water and roots. Their capacity to hold available moisture is moderate. Flooding is common during long periods of rain, which occur late in winter and early in spring. Crops are occasionally damaged by floods. Some areas get deposits of silt; others are scoured. Natural fertility and the supply of organic matter are low. The soils in this unit are:

Altavista and Masada silt loams, low terraces, 0 to 2 percent slopes.

About two-thirds of the acreage is cultivated. The crops suitable for the soils in this group are corn, cotton, soybeans, small grains, sorghum, some truck crops, and many grasses and legumes. These should be grown in a cropping system that consists of 1 year of sod followed by 2 years of row crops.

The soils in this unit need large quantities of all plant nutrients, lime, and organic matter. They respond to management, especially to additions of fertilizer and organic matter. Tilth is good, and it can be maintained without difficulty. Excess moisture interferes with tillage and other field operations. Runoff is not a serious hazard, because of gentle slopes. The maximum use of winter cover crops is needed to prevent scouring by floods that commonly occur.

Capability Unit IIIe-1

This unit consists of deep, friable, well-drained, medium to strongly acid soils. Slopes range from 2 to 10 percent. These soils have been slightly to severely eroded. They have a clay or silty clay subsoil. All have good structure and are moderately permeable to roots and water. The capacity to hold available moisture is moderate. Infiltration is moderate, and runoff is moderate to high. Natural fertility is moderate. The soils in this unit are:

- Anniston gravelly clay loam, 2 to 6 percent slopes, severely eroded.
- Anniston and Allen gravelly loams, 6 to 10 percent slopes, eroded.
- Cumberland gravelly clay loam, 2 to 6 percent slopes, severely eroded.
- Cumberland gravelly clay loam, 6 to 10 percent slopes, severely eroded.
- Decatur and Cumberland loams, 6 to 10 percent slopes, eroded.
- Decatur and Cumberland clay loams, 2 to 6 percent slopes, severely eroded.
- Decatur and Cumberland clay loams, 6 to 10 percent slopes, severely eroded.
- Dewey silty clay loam, 2 to 6 percent slopes, severely eroded.
- Dewey silty clay loam, 6 to 10 percent slopes, severely eroded.
- Dewey cherty silty clay loam, 6 to 10 percent slopes, severely eroded.

About 40 percent of the acreage is cultivated. The crops suitable for these soils are corn, cotton, soybeans, sorghum, small grains, some truck crops, and most legumes and grasses. They should be grown in cropping systems consisting of 2 years of a close-growing sod crop followed by 1 or 2 years of row crops. Other suitable cropping systems consist of 1 year of a reseeding legume allowed to seed, followed by 2 years of row crops; or 2 years of small grains followed by 1 year of a row crop.

The soils in this unit respond well to additions of lime, fertilizer, and organic matter. Phosphate and potash are needed for all crops, including pasture plants. Nitrogen is needed for all nonlegumes. Alfalfa needs boron. Tillage can be performed within a narrow range of moisture content. Good tilth is difficult to maintain. Gravel or chert in most of these soils interferes with tillage.

The use of a close-growing ground cover is the most effective means of controlling runoff. Contour tillage and the use of terraces, field borders, and vegetated waterways are usually needed to control runoff on steep slopes. Stripcropping and subsoiling also help control runoff.

Capability Unit IIIe-2

This unit consists of deep, friable, well-drained, fine sandy loams and gravelly fine sandy loams. Slopes range from 6 to 10 percent. The soils are strongly acid. All are eroded, and most of them have lost about 50 percent of the original surface soil through erosion. The subsoil is fine sandy clay loam.

The soils of this unit have good structure, and they are moderately permeable to water, air, and roots. They have a moderate capacity to hold available moisture. Erosion is a hazard on all of these soils. Natural fertility and supplies of organic matter are low. The soils in this unit are:

- Holston fine sandy loam, 6 to 10 percent slopes, eroded.
- Jefferson gravelly fine sandy loam, 6 to 10 percent slopes, eroded.
- Linker gravelly fine sandy loam, 6 to 10 percent slopes, eroded.
- Nolichucky gravelly fine sandy loam, 6 to 10 percent slopes, eroded.

About one-fourth of the acreage is cultivated. The crops suitable to these soils are cotton, corn, soybeans, sorghum, small grains, truck crops, and legumes and grasses. These should be grown in any of the following cropping systems: (a) 2 years of a sod crop followed by 1 or 2 years of row crops; (b) 1 year of a reseeding legume allowed to seed, followed by 2 years of row crops; or (c) 2 years of small grains followed by 1 year of a row crop.

These soils need large quantities of all plant nutrients, lime, and organic matter, and they respond well to these amendments. Alfalfa needs boron. Tilth is good and can be easily maintained. The range in moisture conditions suitable for tillage is wide. Gravel restricts tillage to some extent. The use of a close-growing ground cover is the most effective way to control runoff. Contour tillage, terraces, field borders, and vegetated waterways are usually needed to control runoff in cultivated areas. Stripcropping also helps to control runoff.

Capability Unit IIIe-3

This unit consists of slightly or moderately eroded, well-drained, deep to moderately deep soils. These soils are strongly acid. They have a cherty silt loam surface soil and a cherty silty clay loam subsoil. They occur in uplands on slopes of 6 to 10 percent and have developed from cherty limestone. Some places have lost as much as 75 percent of the original surface soil through erosion. The permeability of the soils of this unit is moderate to rapid. The capacity to hold available moisture is low to moderate. Natural fertility and organic matter are low. The soils in this unit are:

- Clarksville cherty silt loam, 6 to 10 percent slopes.
- Fullerton cherty silt loam, 6 to 10 percent slopes, eroded.

About one-fifth of the acreage is cultivated. The suitable crops for these soils are corn, cotton, small grains, soybeans, sorghum, truck crops, and many grasses and legumes. These can be safely grown in any of the following cropping systems: (a) 2 years of sod crops followed by 1 or 2 years of row crops; (b) 1 year of a reseeding legume, allowed to seed, followed by 2 years of row crops; or, (c) 2 years of small grains followed by 1 year of a row crop.

These soils need large quantities of all plant nutrients, lime, and organic matter. They respond well to fertilizer, lime, and organic matter, but a high fertility level is difficult to maintain. Good tilth is not particularly difficult to maintain. Tillage should be avoided when the soils are wet. Chert interferes somewhat with tillage.

The use of close-growing cover crops is the most effective way to control runoff. Contour tillage, stripcropping, and the use of terraces, field borders, and vegetated waterways are generally needed to control runoff in cultivated areas.

Capability Unit IIIe-4

This unit consists of deep, friable to firm, well-drained soils on slopes of 2 to 10 percent. They are strongly to very strongly acid. They occur on uplands and foot slopes and have been eroded or severely eroded. Erosion has removed 25 to 75 percent of the original surface soil from the eroded soils, and all of the original surface soil and some of the subsoil from the severely eroded soil. The eroded soils have fairly good tilth; the severely eroded soil has poor tilth. The soils of this unit are moderately permeable to water and roots. Their capacity to hold available moisture is moderate. Natural fertility and the supply of organic matter are low. Rapid runoff is a serious hazard. The soils in this unit are:

- Enders gravelly fine sandy loam, 6 to 10 percent slopes, eroded.
- Georgeville and Tate soils, 2 to 10 percent slopes, eroded.
- Tate gravelly silt loam, 6 to 10 percent slopes, eroded.
- Tate gravelly silty clay loam, 2 to 6 percent slopes, severely eroded.

About one-third of the acreage is cultivated. The crops suitable for these soils are corn, cotton, small grains, soybeans, sorghum, truck crops, and many grasses and legumes. These can be safely grown in the following cropping systems: (a) 2 years of a sod crop followed by 1 or 2 years of row crops; (b) 1 year of a reseeding legume allowed to seed, followed by 2 years of row crops; or, (c) 2 years of small grains followed by 1 year of a row crop.

These soils require large quantities of all plant nutrients, lime, and organic matter. They respond to management, especially to the addition of organic matter and ample fertilizer. Tillage should be avoided when the soils are wet. Gravel interferes with tillage and other field operations to some extent. The use of sod crops is the most effective way to control runoff. Terraces, field borders, contour tillage, and vegetated waterways are usually needed in cultivated areas.

Capability Unit IIIe-5

This unit consists of eroded, moderately well drained soils with fragipans. These soils have developed in local alluvium. They occupy slopes of 6 to 10 percent. The surface soil is gravelly fine sandy loam, fine sandy loam, or cherty silt loam. Erosion has removed 50 to 75 percent of the original surface soil; shallow gullies are common in many areas. The surface soil and upper subsoil are moderately permeable to water and roots. Normally the soils are well drained, but they become temporarily waterlogged in wet seasons. The lower subsoil is compact, usually heavier than the upper subsoil, and slowly permeable to water and roots. It is also mottled—an indication of poor drainage. The Cane soil is slightly better drained than the other soils in this unit. The soils of this unit have fairly good structure and a moderate capacity to hold available moisture. Runoff is a severe limitation. The soils in this unit are:

- Cane fine sandy loam, 6 to 10 percent slopes, eroded.
- Landisburg cherty silt loam, 6 to 10 percent slopes, eroded.
- Locust gravelly fine sandy loam, 6 to 10 percent slopes, eroded.

About one-fourth of the acreage is cultivated. The crops suitable for these soils are corn, cotton, small grains, sorghum, soybeans, some truck crops, and many grasses and legumes. These can be safely grown in the following cropping systems: (a) 2 years of sod crops followed by 2 years of row crops; (b) 1 year of a reseeding legume allowed to seed, followed by 2 years of row crops; or, (c) 2 years of small grains followed by 1 year of a row crop.

These soils need large quantities of all plant nutrients, lime, and organic matter. They respond to management, particularly to the additions of fertilizer and lime. The soils have fairly good tilth that is somewhat difficult to maintain. Because of erosion, tillage can be performed only within a narrow range of moisture conditions. Gravel and chert in some soil types interfere slightly with tillage. The use of sod crops is the most effective way to control runoff. Proper use of crop residues also helps. Contour tillage, stripcropping, and the use of field borders, terraces, and vegetated waterways are usually required in cultivated areas.

Capability Unit IIIe-6

This unit consists of eroded, moderately well drained to well drained soils on uplands. These soils have slopes that range from 2 to 10 percent. They have a thin gravelly loam or silt loam surface soil and a mottled, heavy, plastic silty clay or clay subsoil. Shale or bedrock is at depths ranging from 1 to 4 feet. The surface soil is strongly acid. The subsoil of all the Rarden soils is strongly acid; that of the Conasauga soil is mildly alkaline. Most of the soils of this unit have lost about 50 percent of the original surface soil through erosion.

These soils have strong structure, but they are slowly permeable to water and roots. They have a low capacity for available moisture. Runoff and infiltration are medium. Erosion is a problem. Natural fertility and the supply of organic matter are low. The soils in this unit are:

- Conasauga silt loam, 2 to 6 percent slopes, eroded.
- Rarden gravelly loam, shallow, 2 to 6 percent slopes, eroded.
- Rarden gravelly loam, shallow, 6 to 10 percent slopes, eroded.
- Rarden silt loam, shallow, 2 to 6 percent slopes, eroded.
- Rarden silt loam, shallow, 6 to 10 percent slopes, eroded.

About one-fifth of the acreage is cultivated. Suitable crops are small grains, whiteclover, annual lespedeza, Caley-peas, many grasses, and trees. The best use for these soils is grazing or forestry. If the soils are cultivated, the following cropping systems should be used: (a) 2 years of a sod crop followed by 1 year of a row crop; or, (b) 2 years of sod crops followed by 1 year of a small grain.

These soils need large quantities of a complete fertilizer and organic matter. They respond only fairly well to good management. They have fair to poor tilth, which is difficult to maintain or improve. This can be tilled within a very limited moisture range. Gravel in some of these soils interferes with tillage.

The maximum use of close-growing sod crops is essential to control runoff. Contour tillage, terraces, and

vegetated waterways are usually required in cultivated areas.

Capability Unit IIIw-1

This unit consists of deep, friable, somewhat poorly to moderately well drained soils on first bottoms, foot slopes, and depressions. Slopes are 0 to 2 percent. The texture of the surface soil ranges from fine sandy loam to silt loam and cherty silt loam. The soils are slightly to strongly acid. They have little structure and, except for the Lobelville soils, are moderately permeable to water and roots. The Lobelville soils are slowly permeable. They have a cemented chert layer at depths of 20 to 40 inches that retards the movement of water and the penetration of roots. Some areas mapped as Lindside silt loam, local alluvium, 0 to 2 percent slopes, are developing over a layer of heavy, slowly permeable silty clay, which is at depths of 17 to 42 inches. The water table in most of these soils is moderately high. Natural fertility and supplies of organic matter are moderate to low. The soils in this unit are:

- Lindside silt loam, local alluvium, 0 to 2 percent slopes.
- Lindside and Newark silt loams, 0 to 2 percent slopes.
- Lobelville cherty silt loam, local alluvium, 0 to 2 percent slopes.
- Lobelville silt loam and cherty silt loam, 0 to 2 percent slopes.
- Philo and Stendal fine sandy loams, 0 to 2 percent slopes.
- Philo and Stendal silt loams, 0 to 2 percent slopes.
- Philo and Stendal soils, local alluvium, 0 to 2 percent slopes.

About one-fourth of the acreage is cultivated. The crops suitable for these soils are corn, small grains, sorghum, soybeans, some truck crops, and many grasses and legumes. These can be grown safely in either of the following cropping systems: (a) 2 years of sod followed by 2 years of row crops; or, (b) 1 year of Caley-peas or other reseeding legumes allowed to seed, followed by 2 years of row crops.

These soils need moderately large quantities of all plant nutrients and organic matter. They respond well to the additions of organic matter and fertilizers and moderately well to lime. Good tilth is easily maintained. Tillage and other field operations are restricted by wet periods. Flooding is frequent in periods of prolonged rain. Much of the acreage in this unit needs drainage ditches.

Capability Unit IIIw-2

This unit consists of friable, strongly to very strongly acid, somewhat poorly drained soils on stream terraces. These soils have slopes of 0 to 2 percent. In most areas the surface soil is silt loam, but in some it is fine sandy loam or cherty silt loam. A fragipan or claypan is at depths ranging from 12 to 24 inches. The structure in these soils is fairly good. Runoff and infiltration are slow to medium. The surface soil and upper subsoil are moderately permeable to water and roots. The lower subsoil is compact, usually heavier than the upper subsoil, and slowly permeable. In addition it is mottled—an indication of poor drainage. The soils in this unit are waterlogged in wet seasons. Lack of drainage is a greater hazard than erosion. Natural fertility and the supply of organic matter are low to moderate. The soils in this unit are:

- Robertsville silt loam, overwashed, 0 to 2 percent slopes.
- Taft silt loam, 0 to 2 percent slopes.
- Tyler silt loam, 0 to 2 percent slopes.

Nearly half the acreage is cultivated. Crops suited to these soils are sorghum, dallisgrass, fescue (fig. 5), bahiagrass, whiteclover, Caley-peas, and annual lespedeza. These can be grown in either of the following cropping systems: (a) 2 years of sod followed by 2 years of row crops; or, (b) 1 year of Caley-peas or other reseeding legumes allowed to seed, followed by 2 years of row crops.

These soils need moderately large to large quantities of all plant nutrients, lime, and organic matter, and they respond well to these amendments. Tillage and other field operations are restricted at times by wet soil. Many areas in this unit need drainage ditches to reduce flooding and to dispose of excess water.

Capability Unit IVe-1

This unit consists of deep, friable, well-drained, medium to strongly acid soils on uplands and stream terraces. Slopes range from 6 to 25 percent. The surface soil is loam, gravelly loam, clay loam, gravelly clay loam, or cherty silty clay loam. The subsoil is clay or silty clay. All or nearly all of the original surface soil has been lost through erosion. The structure of these soils is good. Permeability to roots and water is moderate. Infiltration is slow; runoff is a hazard. The capacity to hold available moisture is moderate to low. Tilth is poor. Natural fertility is moderate, and the supply of organic matter is low. The soils in this unit are:

- Anniston gravelly clay loam, 6 to 10 percent slopes, severely eroded.
- Anniston and Allen gravelly loams, 10 to 15 percent slopes, eroded.
- Cumberland gravelly clay loam, 10 to 25 percent slopes, severely eroded.
- Decatur and Cumberland loams, 10 to 25 percent slopes, eroded.
- Decatur and Cumberland clay loams, 10 to 25 percent slopes, severely eroded.
- Dewey cherty silty clay loam, 10 to 15 percent slopes, severely eroded.

***Figure 5.*—Fescue on Taft silt loam, 0 to 2 percent slopes (capability unit IIIw-2) and on Lindside and Newark silt loams, 0 to 2 percent slopes (capability unit IIIw-1).**

About one-tenth of the acreage is cultivated. Suitable crops for these soils are cotton, corn, sorghum, soybeans, small grains, some truck crops, and many grasses and legumes. The crops can be grown in either of the following cropping systems: (a) 3 years of perennial sod followed by 1 year of a row crop or a small grain; or, (b) 2 years of a reseeding legume allowed to seed, followed by 1 year of a row crop.

These soils need moderately large quantities of all plant nutrients, large quantities of organic matter, and moderate to large quantities of lime. The response to lime ranges from fair to good, depending on soil type. The response of all soils to fertilizer and organic matter is good. Good tilth is difficult to maintain in the more severely eroded areas. Tillage should be kept to a minimum. Steepness of slope and, in some soils, gravel and chert interfere with tillage. A good cropping system and proper use of crop residues are essential for the safe cultivation of these soils. In addition, contour tillage, terraces, vegetated waterways, and field borders are needed to control runoff. Stripcropping is also beneficial. Diversion ditches may be needed.

Capability Unit IVe-2

This capability unit consists of deep, friable, well-drained, strongly acid soils on uplands and foot slopes. The soils have slopes ranging from 6 to 15 percent. The surface soil is gravelly fine sandy loam, gravelly silty clay loam, cherty silt loam, or cherty silty clay loam. The subsoil is moderately permeable fine sandy clay or silty clay loam. All or part of the original surface soil has been lost through erosion. These soils have good structure. Their capacity to hold available moisture is moderate to low. Infiltration is slow. Natural fertility and the supply of organic matter are low. Erosion is a severe hazard. The soils in this unit are:

- Clarksville cherty silt loam, 10 to 15 percent slopes.
- Enders gravelly fine sandy loam, 10 to 15 percent slopes.
- Fullerton cherty silt loam, 10 to 15 percent slopes, eroded.
- Fullerton cherty silty clay loam, 6 to 10 percent slopes, severely eroded.
- Jefferson gravelly fine sandy loam, 10 to 15 percent slopes, eroded.
- Tate gravelly silty clay loam, 6 to 10 percent slopes, severely eroded.

About 10 percent of the acreage of these soils is cultivated. Suitable crops are cotton, corn, small grains, tomatoes, and many grasses and legumes. These crops can be grown in either of the following cropping systems: (a) 3 years of perennial sod followed by 1 year of a row crop; or, (b) 2 years of a reseeding legume allowed to seed, followed by 1 year of a row crop.

These soils need very large quantities of all plant nutrients, lime, and organic matter for all crops. Good tilth is difficult to maintain. Chert and slope materially interfere with tillage, which should be kept at a minimum.

A good cropping system and the proper use of crop residues are essential to control runoff from cultivated soils. Contour tillage and the use of terraces, vegetated waterways, and field borders are also needed. Stripcropping is also beneficial. Diversion ditches may be needed.

Figure 6.—**Bahiagrass and ball clover on the Rarden-Montevallo complex, 2 to 10 percent slopes, eroded. This pasture will graze one cow an estimated 120 days a year per acre.**

Capability Unit IVe 3

In this unit are eroded to severely eroded, well drained to moderately well drained, moderately deep and shallow soils on uplands. Slopes range from 2 to 10 percent. The surface soil is silt loam or silty clay loam. Most of the surface soil and some of the subsoil have been lost through erosion. The Rarden soils have strong structure and a slowly permeable, heavy, plastic clay subsoil. The other soils in this unit have a weak structure and rapid permeability. All are medium to strongly acid, and all have medium to rapid runoff. Infiltration is slow. The capacity to hold available moisture is low. Natural fertility and the supply of organic matter are low. Erosion is a severe hazard. The soils in this unit are:

- Lehew-Montevallo soils, 2 to 10 percent slopes, eroded.
- Rarden silty clay loam, shallow, 2 to 6 percent slopes, severely eroded.
- Rarden silty clay loam, shallow, 6 to 10 percent slopes, severely eroded.
- Rarden-Montevallo complex, 2 to 10 percent slopes, eroded.

About one-fifth of the acreage is cultivated; most of the rest is in forest or is idle. The crops suited to these soils are sericea lespedeza, Caley-peas, annual lespedeza, several grasses, and trees (fig. 6). Some of the acreage is suited to small grains. Most of the soils should be in sod crops or trees.

These soils need large to very large quantities of fertilizer, lime, and organic matter. Response to good management is poor to fair. Good tilth is difficult to maintain. These soils can be tilled only within a narrow range of moisture content. Tillage should be held to a mini-

mum. Runoff is a serious hazard. Contour tillage, terraces, vegetated waterways, and diversion terraces help to control runoff. The best way to prevent erosion is to maintain a good ground cover.

Capability Unit IVe-4

This unit consists of stony, deep to moderately deep, well-drained, friable soils on uplands and foot slopes. These soils have slopes ranging from 0 to 10 percent. The surface soil is stony loam or stony fine sandy loam. The subsoil ranges from fine sandy clay loam to clay loam. Erosion has been slight to moderate. Pieces of chert, quartzite, and sandstone ranging from 3 to 6 inches or more in diameter are on and in the soil. Permeability is moderate to rapid. The capacity to hold available moisture is high to low. Natural fertility and the supply of organic matter are low. Runoff is a slight to moderate hazard. The soils in this unit are:

Anniston and Allen stony loams, 0 to 10 percent slopes.
Clarksville-Fullerton stony loams, 6 to 10 percent slopes.
Jefferson stony fine sandy loam, 0 to 10 percent slopes.

About nine-tenths of the acreage is in forest and idle cropland; only a small part is cultivated. Trees, many grasses, and some legumes are suited to these soils. Cultivated crops are not suited.

Large quantities of all plant nutrients, lime, and organic matter are needed. The response to these amendments is good. Good tilth is not difficult to maintain, but tillage should be kept to a minimum. Stones interfere with tillage and other fieldwork. Runoff can be controlled by a good ground cover. Contour tillage, terraces, and vegetated waterways may also be needed.

Capability Unit IVw-1

This capability unit consists of deep to moderately deep, poorly drained, friable silt loams and some areas of cherty silt loam. These soils are medium to strongly acid. They are on first bottoms, foot slopes, and stream terraces. Most of them have a heavy, plastic clay or fragipan layer that retards the movement of water and air and the growth of roots. Most of them also have a high water table, especially in wet seasons. Soil structure ranges from weak to strong. Permeability is slow to very slow, and the capacity to hold available moisture ranges from very low to high. Natural fertility and the supply of organic matter are low to moderate. The soils in this unit are:

Atkins silt loam, 0 to 2 percent slopes.
Atkins and Stendal soils, local alluvium, 0 to 2 percent slopes.
Dunning silt loam, overwashed, 0 to 2 percent slopes.
Lee silt loam and cherty silt loam, 0 to 2 percent slopes.
Lee silt loam, local alluvium, 0 to 2 percent slopes.
Melvin silt loam, 0 to 2 percent slopes.
Purdy silt loam, 0 to 2 percent slopes.
Robertsville silt loam, 0 to 2 percent slopes.

About eight-tenths of the acreage is in forest and in idle cropland; only about one-tenth is cultivated. The crops suited to these soils are legumes and many grasses. If drained, some soils are suited to corn, soybeans, and sorghum. A good cropping system consists of 3 years or more of sod followed by 1 year of a row crop. It is best, however, to keep the soils in permanent sod.

These soils need moderately large to large quantities of all plant nutrients, lime, and organic matter. They respond well to these amendments. Tillage of some soils is difficult. In some soils, prolonged wetness and chert interfere with tillage. Artificial drainage is usually needed to remove excess water.

Capability Unit VIe-1

This unit consists of deep, friable, well-drained soils on uplands and foot slopes. These soils have slopes ranging from 6 to 25 percent. They are medium acid to strongly acid. The texture of the surface soil is gravelly loam, gravelly clay loam, cherty silt loam, or cherty silty clay loam. That of the subsoil is silty clay loam or clay loam. Erosion has removed some or all of the original surface soil. Soil structure is weak to moderate. These soils are moderately permeable to water and roots. Infiltration is moderate, and runoff is medium to rapid. The capacity to hold available moisture is moderate to low. Most areas have gravel or fragments of chert as much as 3 inches in diameter on and in the soil. Natural fertility is low to moderate. The supply of organic matter is low. The soils in this capability unit are:

Anniston and Allen gravelly loams, 15 to 25 percent slopes, eroded.
Anniston gravelly clay loam, 10 to 15 percent slopes, severely eroded.
Clarksville cherty silt loam, 6 to 15 percent slopes, eroded.
Fullerton cherty silt loam, 15 to 25 percent slopes.
Fullerton cherty silty clay loam, 10 to 15 percent slopes, severely eroded.

About nine-tenths of the acreage is in forest and idle cropland; only a small part is cultivated. The crops suited to these soils are sericea lespedeza, annual lespedeza, kudzu, and several kinds of grasses and trees. Some areas are suited to small grain. The soils in this unit should be kept in sod crops or trees. Some areas can be planted occasionally to a small grain.

The soils need large or very large quantities of fertilizer, lime, and organic matter. The response to good management is poor to fair. Good tilth is very difficult to maintain. Tillage can be performed within a limited range of moisture conditions, and it should be held to a minimum. Runoff is a serious hazard, but it can be controlled by a cover of vegetation. Contour tillage, terraces, vegetated waterways, and diversion ditches are beneficial.

Capability Unit VIe-2

This unit consists of well-drained, friable, shallow to deep stony loams and stony fine sandy loams on uplands and foot slopes. Slopes range from 10 to 25 percent. These soils are medium to strongly acid. Soil structure is weak to moderate. Permeability is moderate to rapid, and the capacity to hold available moisture is low to moderate. Natural fertility and the supply of organic matter are low. Runoff is a moderate hazard, even in woodland. The soils in this unit are:

Clarksville-Fullerton stony loams, 10 to 15 percent slopes.
Jefferson stony fine sandy loam, 10 to 25 percent slopes.
Muskingum stony fine sandy loam, 10 to 15 percent slopes.

About nine-tenths of the acreage is in forest. The more favorable sites are suited to grasses and legumes.

Cultivated crops are not suitable. The soils should be kept permanently in a cover of growing plants, preferably trees.

These soils need large quantities of fertilizer, lime, and organic matter. Sod crops respond well to these amendments. Tillage is difficult or impractical because of stones and steepness of slope. Runoff can be controlled through the maintenance of a good ground cover. Contour tillage, terraces, and vegetated waterways may be needed when these soils are in sod crops.

CAPABILITY UNIT VIe-3

This unit consists of friable, shallow, well-drained, shaly silt loam and shaly silty clay loam soils on slopes of 6 to 15 percent. These soils are medium to strongly acid. Erosion has been slight to severe. Some of the soils have lost all of the original surface soil and some of the subsoil. Runoff and permeability are rapid. Soil structure is weak, and the capacity to hold available moisture is low. Natural fertility and the supply of organic matter are low. The soils in this unit are:

Lehew-Montevallo soils, 10 to 15 percent slopes, eroded.
Montevallo shaly silt loam, 10 to 15 percent slopes.
Montevallo shaly silty clay loam, 6 to 10 percent slopes, severely eroded.

About 80 percent of the acreage is in forest. Some areas are suited to sericea lespedeza, annual lespedeza, and some grasses. The soils should be kept permanently in vegetation, preferably trees.

These soils need large to very large quantities of fertilizer, lime, and organic matter. Sod crops respond fairly well to well to these amendments. Tillage is difficult or impractical and should be kept to a minimum. Runoff is a serious hazard, but it can be controlled by maintaining a cover of vegetation. Contour tillage, terraces, and vegetated waterways may be needed when the soils are in sod crops.

CAPABILITY UNIT VIIe-1

This unit consists of well-drained, moderately deep to deep, friable soils on uplands. They are slightly to severely eroded and gullied. Slopes range from 10 to 40 percent. These soils are slightly to strongly acid. The texture of the surface soil is stony loam, cherty silt loam, or cherty silty clay loam, or gravelly clay loam. Soil structure ranges from weak to strong. Permeability is moderate to rapid, and the capacity to hold available moisture is low to moderate. Runoff is generally rapid. Natural fertility and the supply of organic matter are low. Tilth is poor, and the hazard of erosion is great. The soils in this unit are:

Anniston gravelly clay loam, 15 to 25 percent slopes, severely eroded.
Anniston and Allen stony loams, 10 to 25 percent slopes.
Clarksville cherty silt loam, 15 to 25 percent slopes.
Clarksville-Fullerton stony loams, 15 to 40 percent slopes.
Fullerton cherty silty clay loam, 15 to 25 percent slopes, severely eroded.
Gullied land.

Nearly all the acreage is in forest. Some areas may be suited to hardy perennial sod crops. These soils should be kept permanently in vegetation, preferably trees.

These soils need large to very large quantities of all plant nutrients and organic matter and medium to large amounts of lime. The response to these amendments is poor to fair. Tillage is very difficult and is impractical. Runoff is generally rapid, but it can be controlled by a good ground cover of vegetation. Contour tillage, terraces, vegetated waterways, and mulching may be needed if these soils are planted to sod crops.

CAPABILITY UNIT VIIe-2

This unit consists of well-drained, shallow or stony, friable soils on uplands. Slopes are 10 percent or more. These soils are medium to strongly acid. Erosion has been slight to severe, and some of the soils have lost all of their original surface soil. The grade of structure ranges from none to moderate. Permeability is moderate to rapid, and the capacity to hold available moisture is low. Natural fertility and the supply of organic matter are low. Runoff is rapid; the erosion hazard is high. The soils in this unit are:

Lehew-Montevallo soils, 15 to 30 percent slopes.
Montevallo shaly silt loam, 15 to 40 percent slopes.
Montevallo shaly silty clay loam, 10 to 40 percent slopes, severely eroded.
Muskingum stony fine sandy loam, 15 to 25 percent slopes.
Stony rough land, limestone.
Stony rough land, slate.
Stony rough land, sandstone.
Talladega soils, 10 to 40 percent slopes.
Terrace escarpments.

About nine-tenths of the acreage is in forest and idle areas; only a small part is cultivated. Some areas may be suited to hardy perennial sod crops. The soils should be kept permanently in vegetation, preferably trees.

These soils need large to very large quantities of all plant nutrients, lime, and organic matter. The response of sod crops to these amendments is poor to fair. Tillage is very difficult or impractical. Runoff is generally rapid, but it can be controlled by a good ground cover of vegetation. Contour tillage, terraces, vegetated waterways, and mulching may be needed if sod crops are planted.

Estimated Yields

The estimated average acre yields that can be expected from the principal crops grown on soils of Calhoun County, Ala., under two levels of management, are given in table 1. Yields in columns A are those obtained, on the average, under prevailing or ordinary management. Under such management not enough lime and fertilizer are used to produce maximum yields, definite cropping systems are not generally followed, and erosion control and drainage are usually inadequate. Improved varieties of crops and certified seed are not always used.

Yields in columns B are those expected under improved management, which includes (1) the application of enough commercial fertilizer, lime, or manure; (2) the proper use of cropping systems and crop residues; (3) drainage where needed; and (4) adequate measures for the control of runoff and erosion. Improved pasture management consists of seedbed preparation, application of lime and fertilizer, the use of good plant varieties and plant mixtures, regulated grazing, and the control of undesirable plants.

TABLE 1.—*Estimated average acre yields of principal crops*

[Yields in columns A are those expected under ordinary management; those in columns B, under improved management. Absence of yield indicates crop is seldom, if ever, grown]

Soil[1]	Capability unit	Lint cotton		Corn		Oats		Alfalfa		Sericea lespedeza		Pasture	
		A	B	A	B	A	B	A	B	A	B	A	B
Altavista and Masada silt loams, low terraces:		*Lbs.*	*Lbs.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Tons*	*Tons*	*Tons*	*Tons*	*Cow-acre-days*[2]	*Cow-acre-days*[2]
0 to 2 percent slopes	IIw-2	250	500	40	65	50	65	-----	-----	-----	-----	135	225
2 to 6 percent slopes, eroded	IIe-4	400	700	35	60	45	60	1½	2½	1½	3	105	210
Anniston gravelly clay loam:													
2 to 6 percent slopes, severely eroded	IIIe-1	400	750	30	45	40	55	2	2½	1¼	2½	75	180
6 to 10 percent slopes, severely eroded	IVe-1	300	600	15	25	25	45	-----	-----	1	2	60	135
10 to 15 percent slopes, severely eroded	VIe-1	-----	-----	-----	-----	-----	-----	-----	-----	1	1½	60	105
15 to 25 percent slopes, severely eroded	VIIe-1	-----	-----	-----	-----	-----	-----	-----	-----	-----	1	-----	90
Anniston and Allen gravelly loams:													
0 to 2 percent slopes	I-1	550	1,000	45	75	60	85	3	4	1½	3	135	225
2 to 6 percent slopes, eroded	IIe-1	500	900	40	70	50	80	2½	3½	1½	3	120	210
6 to 10 percent slopes, eroded	IIIe-1	450	800	30	60	40	70	2	2½	1½	2½	75	180
10 to 15 percent slopes, eroded	IVe-1	250	500	15	35	25	45	-----	-----	1	2	60	135
15 to 25 percent slopes, eroded	VIe-1	-----	-----	-----	-----	-----	-----	-----	-----	1	1½	60	105
Anniston and Allen stony loams, 0 to 10 percent slopes	IVe-4	-----	-----	-----	-----	-----	-----	-----	-----	1	1½	60	120
Atkins silt loam, 0 to 2 percent slopes	IVw-1	-----	-----	20	50	-----	-----	-----	-----	-----	-----	105	195
Atkins and Stendal soils, local alluvium, 0 to 2 percent slopes	IVw-1	-----	-----	20	50	-----	-----	-----	-----	-----	-----	105	195
Camp silt loam, 2 to 6 percent slopes	IIe-4	400	625	25	45	40	50	-----	-----	1¼	2	75	195
Cane fine sandy loam:													
2 to 6 percent slopes, eroded	IIe-5	400	700	30	50	40	60	1½	2	1¼	2	105	195
6 to 10 percent slopes, eroded	IIIe-5	350	550	25	45	35	50	-----	-----	1	2	90	180
Captina silt loam:													
0 to 6 percent slopes	IIe-5	425	650	30	55	45	65	-----	-----	1½	2	105	195
2 to 6 percent slopes, eroded	IIe-5	400	600	25	50	40	60	-----	-----	1¼	2	90	195
Clarksville cherty silt loam:													
2 to 6 percent slopes	IIe-3	350	600	30	50	45	60	1¼	2	1½	2	60	150
6 to 10 percent slopes	IIIe-3	300	500	25	45	40	50	1	1½	1½	2	60	135
10 to 15 percent slopes	IVe-2	250	400	20	35	20	40	-----	-----	1	1½	60	120
6 to 15 percent slopes, eroded	VIe-1	-----	-----	10	25	-----	-----	-----	-----	-----	1	-----	105
15 to 25 percent slopes	VIIe-1	-----	-----	-----	-----	-----	-----	-----	-----	-----	1	-----	75
Clarksville-Fullerton stony loams:													
6 to 10 percent slopes	IVe-4	-----	-----	20	30	-----	-----	-----	-----	1	1¼	60	120
10 to 15 percent slopes	VIe-2	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	75
Conasauga silt loam, 2 to 6 percent slopes, eroded	IIIe-6	175	350	10	25	40	50	-----	-----	1	2	60	150
Cumberland gravelly loam, 2 to 6 percent slopes, eroded	IIe-1	500	900	40	65	50	70	2½	3½	1½	3	120	210
Cumberland gravelly clay loam:													
2 to 6 percent slopes, severely eroded	IIIe-1	400	750	30	45	40	50	2	2½	1¼	2½	75	180
6 to 10 percent slopes, severely eroded	IIIe-1	375	650	25	40	30	45	1½	2	1¼	2½	75	165
10 to 25 percent slopes, severely eroded	IVe-1	-----	-----	15	25	20	30	-----	-----	1	2	60	135
Decatur and Cumberland clay loams:													
2 to 6 percent slopes, severely eroded	IIIe-1	400	750	30	45	40	50	1½	2½	1¼	2½	75	180
6 to 10 percent slopes, severely eroded	IIIe-1	375	650	25	40	30	45	1	2	1¼	2½	75	165
10 to 25 percent slopes, severely eroded	IVe-1	-----	-----	15	25	15	25	-----	-----	1	2	60	135
Decatur and Cumberland loams:													
0 to 2 percent slopes	I-1	550	1,000	45	75	60	90	3	4	1½	3	135	225
2 to 6 percent slopes, eroded	IIe-1	500	900	40	65	50	80	2½	3½	1½	3	120	210
6 to 10 percent slopes, eroded	IIIe-1	450	800	30	60	40	70	2	2½	1½	2½	75	180
10 to 25 percent slopes, eroded	IVe-1	-----	-----	15	25	20	35	-----	-----	1	2	60	135

See footnotes at end of table.

TABLE 1.—*Estimated average acre yields of principal crops*—Continued

Soil [1]	Capability unit	Lint cotton		Corn		Oats		Alfalfa		Sericea lespedeza		Pasture	
		A	B	A	B	A	B	A	B	A	B	A	B
Dewey cherty silty clay loam:													
6 to 10 percent slopes, severely eroded	IIIe-1	*Lbs.* 375	*Lbs.* 650	*Bu.* 25	*Bu.* 40	*Bu.* 30	*Bu.* 45	*Tons* 1	*Tons* 2	*Tons* 1¼	*Tons* 2½	*Cow-acre-days* [2] 75	*Cow-acre-days* [2] 165
10 to 15 percent slopes, severely eroded	IVe-1	—	—	15	25	15	25	—	—	1	2	60	135
Dewey silty clay loam:													
2 to 6 percent slopes, severely eroded	IIIe-1	400	750	30	50	40	50	1½	2½	1¼	2½	75	180
6 to 10 percent slopes, severely eroded	IIIe-1	375	650	25	40	30	45	1	2	1¼	2½	75	165
Dunning silt loam, overwashed, 0 to 2 percent slopes	IVw-1	—	—	20	50	—	—	—	—	—	—	105	195
Enders gravelly fine sandy loam:													
2 to 6 percent slopes, eroded	IIe-4	450	750	35	55	45	60	1½	2½	1½	3	90	195
6 to 10 percent slopes, eroded	IIIe-4	400	650	30	50	40	55	1	1½	1½	2	75	165
10 to 15 percent slopes	IVe-2	300	550	20	40	20	45	—	—	1	1½	60	120
Etowah silt loam:													
0 to 2 percent slopes	I-1	550	1,000	40	75	60	85	3	4	1½	3	135	225
2 to 6 percent slopes, eroded	IIe-1	500	900	35	65	50	75	2	3	1½	3	120	210
Fullerton cherty silt loam:													
2 to 6 percent slopes	IIe-3	400	750	35	55	45	65	1¾	2½	1½	3	60	165
6 to 10 percent slopes, eroded	IIIe-3	350	625	30	45	40	55	1½	2	1½	2½	60	150
10 to 15 percent slopes, eroded	IVe-2	300	500	20	40	20	45	—	—	1	1½	60	135
15 to 25 percent slopes	VIe-1	—	—	10	30	—	—	—	—	—	1	—	105
Fullerton cherty silty clay loam:													
6 to 10 percent slopes, severely eroded	IVe-2	325	550	20	35	20	40	—	—	1	2	60	120
10 to 15 percent slopes, severely eroded	VIe-1	—	—	10	25	15	25	—	—	—	1	—	105
15 to 25 percent slopes, severely eroded	VIIe-1	—	—	—	—	—	—	—	—	—	1	—	75
Georgeville and Tate soils, 2 to 10 percent slopes, eroded	IIIe-4	350	600	25	45	35	45	—	1½	1½	2	75	150
Holston fine sandy loam:													
2 to 6 percent slopes, eroded	IIe-2	500	850	35	70	50	85	2	3	1½	3	105	195
6 to 10 percent slopes, eroded	IIIe-2	450	750	30	60	40	70	1½	2½	1½	2	75	165
Huntington silt loam, local alluvium, 0 to 2 percent slopes	I-2	500	750	45	90	45	65	2	3	1½	2	165	240
Jefferson gravelly fine sandy loam:													
2 to 6 percent slopes, eroded	IIe-2	500	850	30	70	50	85	2	3	1½	3	105	195
6 to 10 percent slopes, eroded	IIIe-2	450	750	25	60	40	70	1½	2½	1½	2	75	165
10 to 15 percent slopes, eroded	IVe-2	200	450	20	40	20	45	—	—	1	1½	60	120
Jefferson stony fine sandy loam:													
0 to 10 percent slopes	IVe-4	—	—	—	—	—	—	—	—	1	1½	60	120
10 to 25 percent slopes	VIe-2	—	—	—	—	—	—	—	—	—	—	—	—
Landisburg cherty silt loam:													
2 to 6 percent slopes, eroded	IIe-5	400	600	30	55	40	60	—	—	1½	2	90	195
6 to 10 percent slopes, eroded	IIIe-5	300	500	20	40	35	50	—	—	1	1½	90	180
Lee silt loam and cherty silt loam, 0 to 2 percent slopes	IVw-1	—	—	10	30	—	—	—	—	—	—	105	195
Lee silt loam, local alluvium, 0 to 2 percent slopes	IVw-1	—	—	10	30	—	—	—	—	—	—	105	195
Lehew-Montevallo soils:													
2 to 10 percent slopes, eroded	IVe-3	200	350	10	20	15	25	—	—	1	1½	60	120
10 to 15 percent slopes, eroded	VIe-3	—	—	—	—	—	—	—	—	1	1¼	—	105
Lindside silt loam, local alluvium, 0 to 2 percent slopes	IIIw-1	—	—	40	75	40	55	—	—	—	—	165	240
Lindside and Newark silt loams, 0 to 2 percent slopes	IIIw-1	—	—	40	75	—	—	—	—	—	—	165	240
Linker gravelly fine sandy loam, 6 to 10 percent slopes, eroded	IIIe-2	450	800	30	50	40	55	1½	2½	1½	2	75	165
Lobelville cherty silt loam, local alluvium, 0 to 2 percent slopes	IIIw-1	—	—	35	60	40	55	—	—	—	—	105	195
Lobelville silt loam and cherty silt loam, 0 to 2 percent slopes	IIIw-1	—	—	35	65	—	—	—	—	—	—	105	195

See footnotes at end of table.

TABLE 1. *Estimated average acre yields of principal crops*—Continued

Soil [1]	Capability unit	Lint cotton		Corn		Oats		Alfalfa		Sericea lespedeza		Pasture	
		A	B	A	B	A	B	A	B	A	B	A	B
		Lbs.	*Lbs.*	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*Tons*	*Tons*	*Tons*	*Tons*	*Cow-acre-days* [2]	*Cow-acre-days* [2]
Locust gravelly fine sandy loam:													
0 to 2 percent slopes	IIe-5	400	600	30	55	40	60	----	----	1¼	2	90	195
2 to 6 percent slopes, eroded	IIe-5	400	600	25	45	40	60	----	----	1¼	2	90	180
6 to 10 percent slopes, eroded	IIIe-5	350	550	20	40	35	50	----	----	1	1½	90	180
Melvin silt loam, 0 to 2 percent slopes	IVw-1	----	----	----	50	----	----	----	----	----	----	90	195
Minvale cherty silt loam, 2 to 6 percent slopes, eroded	IIe-3	400	750	35	55	40	65	1¾	2½	1½	3	90	180
Monongahela loam:													
0 to 2 percent slopes	IIe-5	400	600	30	55	40	60	----	----	1¼	2	90	195
2 to 6 percent slopes, eroded	IIe-5	400	600	25	45	40	60	----	----	1¼	2	90	180
Montevallo shaly silt loam, 10 to 15 percent slopes	VIe-3	----	----	----	----	----	----	----	----	1	1¼	----	105
Montevallo shaly silty clay loam, 6 to 10 percent slopes, severely eroded	VIe-3	----	----	----	----	----	----	----	----	1	1¼	----	105
Muskingum stony fine sandy loam, 10 to 15 percent slopes	VIe-2	----	----	----	----	----	----	----	----	1	1¼	----	75
Nolichucky gravelly fine sandy loam:													
2 to 6 percent slopes, eroded	IIe-2	500	900	35	60	50	70	2	3	1½	3	105	195
6 to 10 percent slopes, eroded	IIIe-2	450	800	30	60	40	60	1½	2½	1½	2	75	165
Philo and Stendal fine sandy loams, 0 to 2 percent slopes	IIIw-1	----	----	40	75	----	----	----	----	----	----	135	225
Philo and Stendal silt loams, 0 to 2 percent slopes	IIIw-1	----	----	40	75	----	----	----	----	----	----	150	225
Philo and Stendal soils, local alluvium, 0 to 2 percent slopes	IIIw-1	----	----	40	75	40	50	----	----	----	----	120	210
Pope fine sandy loam, 0 to 2 percent slopes	IIw-1	500	750	50	80	45	70	----	----	----	----	165	225
Pope silt loam, 0 to 2 percent slopes	IIw-1	500	750	50	80	45	70	----	----	----	----	165	225
Purdy silt loam, 0 to 2 percent slopes	IVw-1	----	----	10	30	----	----	----	----	----	----	105	195
Rarden gravelly loam, shallow:													
2 to 6 percent slopes, eroded	IIIe-6	200	400	15	25	45	55	----	----	1	2	60	150
6 to 10 percent slopes, eroded	IIIe-6	200	350	15	25	45	55	----	----	1	2	60	150
Rarden silt loam, shallow:													
2 to 6 percent slopes, eroded	IIIe-6	200	400	15	25	45	55	----	----	1	2	60	150
6 to 10 percent slopes, eroded	IIIe-6	200	350	15	25	45	55	----	----	1	2	60	150
Rarden silty clay loam, shallow:													
2 to 6 percent slopes, severely eroded	IVe-3	----	----	10	20	15	25	----	----	1	1½	60	120
6 to 10 percent slopes, severely eroded	IVe-3	----	----	10	20	15	25	----	----	1	1½	60	120
Rarden-Montevallo complex, 2 to 10 percent slopes, eroded	IVe-3	200	350	10	25	15	30	----	----	1	1½	60	120
Robertsville silt loam, 0 to 2 percent slopes	IVw-1	----	----	10	30	----	----	----	----	----	----	105	195
Robertsville silt loam, overwashed, 0 to 2 percent slopes	IIIw-2	----	----	40	75	40	55	----	----	----	----	165	225
Sequatchie fine sandy loam:													
0 to 2 percent slopes	I-1	550	1,000	45	75	60	85	2½	3	1½	3	120	210
2 to 6 percent slopes	IIe-2	500	950	40	70	55	80	2	3	1½	3	105	195
2 to 6 percent slopes, eroded	IIe-2	500	900	35	65	50	70	2	3	1¼	3	90	180
Sequatchie gravelly fine sandy loam, 2 to 6 percent slopes, eroded	IIe-2	500	900	35	60	50	70	2	3	1¼	3	90	180
Taft silt loam, 0 to 2 percent slopes	IIIw-2	----	----	30	60	30	65	----	----	----	----	135	195
Tate gravelly silt loam:													
2 to 6 percent slopes, eroded	IIe-4	400	650	35	55	45	60	1½	2½	1½	3	105	195
6 to 10 percent slopes, eroded	IIIe-4	350	600	30	50	40	55	1	1½	1½	2	75	165
Tate gravelly silty clay loam:													
2 to 6 percent slopes, severely eroded	IIIe-4	350	550	25	45	40	50	----	----	1½	2	60	150
6 to 10 percent slopes, severely eroded	IVe-2	300	500	20	30	30	45	----	----	1¼	2	60	135
Tyler silt loam, 0 to 2 percent slopes	IIIw-2	----	----	30	55	30	60	----	----	----	----	120	180

[1] Mapping units on which the stated crops and pasture are not ordinarily grown have been omitted from the table.

[2] Cow-acre-days is the number of days a year that 1 acre will graze a cow without injury to the pasture.

Woodland Management[3]

The early settlers found trees covering all of Calhoun County. Forests of large hardwood trees were in the bottoms and along waterways, and pines in pure stands were on the higher ground and ridgetops. In between, were the mixed forests of pine and hardwood.

As settlements grew, the acreage of forests gradually diminished. The smoother, more fertile soils were cleared and used for crops, pasture, roads, cities, and other agricultural and industrial purposes. Woodland still occupies about 66 percent of the county.

A well-managed forest helps prevent loss of moisture through runoff. It intercepts rain, and the spongy forest floor absorbs moisture and keeps the soil porous. Humus and roots help the soil under forests absorb large amounts of rainfall, some of which eventually becomes ground water. This is the source of most drinking water and water used in industry.

Woodlands on watersheds help prevent floods and furnish a continuous flow of water in streams. In addition, soil is protected from erosion, and streams and lakes are kept free of silt. The areas in forest are justified by the flood and erosion protection they furnish.

Forests also influence the economy of the county. In 1958, according to the Calhoun County forest ranger, woodland enterprises spent about $280,000 for stumpage and $316,000 for labor and transportation in the county.

According to the 1954 census, firewood was cut on 342 farms, fence posts on 121, sawlogs on 85, and pulpwood on 78. This represents income to landowners.

In Calhoun County several kinds of hardwoods grow in mixed forests. In addition longleaf, loblolly, shortleaf, and Virginia pines are native in the county. A considerable acreage of slash pine has been planted by the Civilian Conservation Corps and by individuals. This species of pine is well suited to the climate and soil of Calhoun County. Most of the wood used for furniture, veneer, or construction can be obtained from trees in this county.

Fires and cutting have damaged more than half the forests. The misuse and neglect of forests have reduced their productivity to about one-third of their potential. Low production is loss to the county because the land now in trees is that best suited to forestry. Forest production, however, is improving because of better management. Well-managed forests are protected from fire, insects, disease, and overgrazing. The better species of trees are planted or allowed to reseed naturally. Cull and weed trees are removed from competition with desirable trees, and crop trees are harvested periodically to prevent crowding the stand.

[3] W. C. AIKEN, woodland conservationist, SCS, assisted in the preparation of this section.

***Figure 7.*—Loblolly and shortleaf pines thinned to D+6 spacing on Dewey cherty silty clay loam, 10 to 15 percent slopes, severely eroded.**

If management is good, forests can produce an income that will compare favorably with that earned by crops on cultivated land. The selection of tree species for different sites depends on fertility of the soil, availability of moisture, and depth of root zone in the soil. Hardwoods can be grown profitably only on the more fertile, moist, deep soils that occur on bottoms and stream terraces. Oak, gum, yellow-poplar, bay, ash, and maple grow very well on these sites. For most soils, pine is the more desirable tree because less time is needed for it to grow to harvest size, and there is more profit for the owner (fig. 7).

The growing of Christmas trees as a special crop is becoming more important. As population increases, this new industry prospers. The species best suited for Christmas trees are redcedar, Arizona cypress, and white and Virginia pines.

Protection from forest fires in the county is under the supervision of the Alabama Department of Conservation, Division of Forestry. They have cooperative agreements with the U.S. Forest Service and two pulp-and-paper companies. Detection and suppression forces in 1958 had two lookout towers and four 15-man firefighting crews. These crews, assisted by an informed public, held the burned area to 0.31 of 1 percent in 1958. This is the best record in the history of the county.

Table 2 shows the estimated woodland suitability groups of soils of Calhoun County.

TABLE 2.—*Estimated woodland suitability*

Woodland suitability group	Soil series and map symbols	Site index for [1]		Plant competition
		Loblolly pine	Shortleaf pine	
1. Deep, friable, moderately well drained soils of medium texture on first bottoms and foot slopes having gradients ranging from 0 to 2 percent; moderate in permeability and high in capacity for supplying available moisture.	Huntington, local alluvium (HuA). Lindside, local alluvium (LkA). Lindside and Newark (LlA). Philo and Stendal (PhA, PlA). Pope (PoA, PpA).	86+	72–81	Moderate
2a. Deep to moderately deep, well drained to moderately well drained, friable soils of medium to coarse texture on stream terraces and foot slopes having gradients ranging from 0 to 6 percent; slow in permeability and moderate to high in capacity for supplying available moisture.	Altavista and Masada, low terraces (AaA, AaB2). Minvale (MnB2). Monongahela (MoA, MoB2). Sequatchie (ScA, ScB ScB2, SeB2).	76 85	62–71	Slight to moderate.
2b. Deep to moderately deep, somewhat poorly drained, friable soils of medium texture on first bottoms and foot slopes having gradients ranging from 0 to 2 percent; moderate to slow in permeability and moderate to low in capacity for supplying available moisture.	Lobelville (LpA). Lobelville, local alluvium (LoA). Philo and Stendal, local alluvium (PkA).	76–85	62–71	Moderate
2c. Deep, friable, poorly drained soils of medium to coarse texture on first bottoms and stream terraces having gradients of 0 to 2 percent; slow in permeability; capacity for supplying available moisture is high in bottom-land soils and low in terrace soils.	Atkins (AkA). Melvin (MaA). Purdy (PuA).	76–85	62–71	Severe
3a. Deep to moderately deep, friable to slightly plastic, well drained to moderately well drained soils on uplands, stream terraces, and foot slopes having gradients of 0 to 25 percent; moderate to slow in permeability; high to low in capacity for supplying available moisture.	Anniston (AbB3, AbC3, AbD3, AbE3). Anniston and Allen (AcA, AcB2, AcC2, AcD2, AcE2, AdC, AdE). Camp (CaB). Captina (CcB, CcB2). Clarksville (CkB, CkC CkC2, CkD, CkE). Cumberland (CoB2, CrB3, CrC3, CrD3). Decatur and Cumberland (DcB3, DcC3, DcD3, DdA, DdB2, DdC2, DdD2). Dewey (DeC3, DeD3, DsB3, DsC3). Etowah (EtA, EtB2). Fullerton (FcB, FcC2, FcD2, FcE, FlC3, FlD3, FlE3). Georgeville and Tate (GeC2). Landisburg (LaB2, LaC2). Rarden (RaB2, RaC2, RdB2, RdC2, ReB3, ReC3). Rarden-Montevallo (RmC2). Tate (TeB2, TeC2, TgB3, TgC3).	66 75	62–71	Slight to moderate.
3b. Deep to moderately deep, friable, well drained to moderately well drained, coarse-textured soils on uplands, stream terraces, and foot slopes having gradients of 0 to 25 percent; permeability moderate to slow; capacity for supplying available moisture moderate to high.	Cane (CbB2, CbC2). Enders (EnB2, EnC2, EnD). Holston (HoB2, HoC2). Jefferson (JeB2, JeC2 JeD2, JfB JfD). Linker (LnC2). Locust (LsA, LsB2, LsC2). Nolichucky (NcB2, NcC2).	66–75	52–61	Slight
3c. Shallow, friable, well-drained, coarse-textured soils on uplands having slopes of 2 to 40 percent; permeability moderate to rapid; low capacity for holding available moisture.	Lehew-Montevallo (LnC2, LhD2, LhE). Montevallo (MsD MsE, MtC3, MtD3). Muskingum (MuD, MuE).	66–75	62–71	Slight
3d. Deep to moderately deep, friable, poorly drained to somewhat poorly drained, medium-textured soils on foot slopes, first bottoms, and stream terraces having gradients of 0 to 2 percent; permeability slow; capacity for supplying available moisture moderate to low.	Atkins and Stendal (AsA). Dunning (DuA). Lee (LcA, LeA). Robertsville (RoA, RsA). Taft (TaA). Tyler (TyA).	66–75	62 71	Slight to moderate.

See footnote at end of table.

groups of soils of Calhoun County, Ala.

Equipment limitation	Seedling mortality	Windthrow hazard	Erosion hazard	Species, in order of priority	Remarks
Moderate	Slight	Slight	Slight	Loblolly, slash, and shortleaf pines, mixed hardwoods.	Loblolly and slash pines grow better on these soils than shortleaf pine.
Slight to moderate.	Slight to moderate.	Slight	Slight	Loblolly, slash, and shortleaf pines, mixed hardwoods.	Loblolly and slash pines grow better on these soils than shortleaf pine.
Moderate	Moderate to slight.	Slight	Slight	Loblolly, slash, and shortleaf pines, mixed hardwoods.	Most of the Lobelville soils have chert fragments up to 2 inches in diameter on the surface and throughout the profile.
Severe	Moderate to severe.	Moderate	Slight	Loblolly, slash, and shortleaf pines, mixed hardwoods.	Loblolly and slash pines grow better on these soils than shortleaf pine.
Slight	Moderate to slight.	Slight	Slight	Loblolly, slash, and shortleaf pines.	The Landisburg soil has a compact layer or fragipan at depths of 20 to 36 inches. The Rarden soils have a heavy, plastic silty clay subsoil.
Slight to moderate.	Slight	Slight	Slight	Loblolly, slash, shortleaf, and longleaf pines.	Littleleaf disease more prevalent on eroded soils. The Locust soils have a moderate to low capacity for supplying available moisture.
Moderate to severe.	Moderate	Moderate	Moderate	Loblolly, shortleaf, longleaf, and Virginia pines.	Littleleaf disease and windthrow are more prevalent on shallow soils.
Moderate to severe.	Slight to severe.	Moderate to slight.	Slight	Loblolly, slash, and shortleaf pines, and mixed hardwoods.	Inadequate drainage and subsoil conditions eliminate longleaf pine as a priority species.

TABLE 2.—*Estimated woodland suitability groups*

Woodland suitability group	Soil series and map symbols	Site index for [1]		Plant competition
		Loblolly pine	Shortleaf pine	
4. Shallow to deep, well drained to moderately well drained soils mainly on slopes of more than 25 percent, but some soils are on slopes ranging from 2 to 25 percent; permeability rapid; low capacity for supplying available moisture.	Clarksville-Fullerton (ClC, ClD, ClF). Conasauga (CnB2). Gullied land (Gl). Stony rough land, limestone, sandstone, and slate (Sr, Ss, St). Talladega (TdE). Terrace escarpments (Tr).	56–65	52–61	Slight

[1] Site index is total height of dominant trees at 50 years of age and indicates potential productivity. It was obtained from age, height, and growth data measured in the field for some soils and interpolated for other similar soils where measured data were not available.

Engineering Interpretations of Soils [4]

This soil survey report for Calhoun County, Ala., contains information which can be used by engineers to:

(1) Make soil and land-use studies that will aid in the selection and development of industrial, business, residential, and recreational sites.
(2) Make estimates of runoff and erosion characteristics for use in designing drainage structures and planning dams and other structures for soil and water conservation.
(3) Make reconnaissance surveys of soil and ground conditions that will aid in selecting highway and airport locations and in planning detailed soil surveys for the intended locations.
(4) Locate sand and gravel for use in structures.
(5) Correlate pavement performance with types of soil, and thus develop information that will be useful in designing and maintaining the pavements.
(6) Determine the suitability of soil units for cross-country movement of vehicles and construction equipment.
(7) Supplement information obtained from other published maps and reports and aerial photographs, for the purpose of making soil maps and reports that can be used readily by engineers.

Engineers of the Bureau of Public Roads collaborated with soil scientists and engineers in the Soil Conservation Service in preparing this part of the soil survey report. Their knowledge of soils, together with field experiences and laboratory tests, have been used to interpret soil conditions in the county for engineering. Many terms in this report have special meaning to soil scientists and are defined in the Glossary.

[4] G. H. HALL, engineer, and M. E. STEPHENS, state soil scientist, SCS, assisted in the preparation of this section.

The soil maps included in this report and the corresponding interpretations are necessarily generalized. The information in the report is not adequate, without further tests and sampling, for the design and construction of specific engineering works.

At many construction sites, major soil variations occur within the depth of proposed excavations, and several different soils may occur within short distances. Maps, descriptions, and data in this report can best be used to plan detailed soil investigations at the construction site. A minimum number of soil samples should be needed for laboratory testing. After testing the soil materials and observing their behavior in place under various conditions, the engineer would be able to anticipate to some extent the properties of individual soil units wherever they are mapped.

Soil Test Data

Samples of the principal soil types of five extensive soil series in Calhoun County were tested by the Division of Physical Research, Bureau of Public Roads, according to standard procedures (*2*). The results of these tests are given in table 3.

Each soil series, except the Montevallo, was sampled in

of soils of Calhoun County, Ala.—Continued

Equipment limitation	Seedling mortality	Windthrow hazard	Erosion hazard	Species, in order of priority	Remarks
Severe	Moderate to severe.	Moderate to slight.	Moderate	Loblolly, shortleaf, longleaf, and Virginia pines.	Windthrow and a littleleaf disease occur on shallow soils. Conasauga soil has plastic subsoil and slow permeability.

three localities. The test data show some variations in physical test characteristics, but they probably do not show the maximum variations of the B and C horizons of each series. All samples were obtained at depths of less than 6 feet. Consequently, the test data may not be adequate for estimating the characteristics of soil material in deep cuts in rolling or hilly topography.

The engineering soil classifications in this table are based on mechanical analyses and on tests of the liquid and plastic limits of the soils. The mechanical analyses were made by combined sieve and hydrometer methods. The percentages of clay obtained by the hydrometer method are not to be used in naming soil textural classes.

The liquid-limit and plastic-limit tests measure the effect of water on the consistence of the soil material. As the moisture content of a clayey soil increases from a very dry state, the material changes from a solid to a semisolid or plastic state. As the moisture content is further increased, the material changes from a plastic to a liquid state. The plastic limit is the moisture content at which the soil material passes from a solid to a plastic state. The liquid limit is the moisture content at which the material passes from a plastic to a liquid state. The plasticity index is the numerical difference between the liquid limit and the plastic limit. It indicates the range of moisture content within which a soil material is in a plastic condition.

Table 3 also gives moisture-density (compaction) data for the tested soils. If a soil material is compacted at successively higher moisture contents, assuming that the compactive effort remains constant, the density of the compacted material will increase until the optimum moisture content is reached. After that, the density decreases with increase in moisture content. The highest dry density obtained in the compaction test is termed maximum dry density. Moisture-density data are important in earthwork, for, as a rule, optimum stability is obtained if the soil is compacted to about the maximum dry density when it is at approximately the optimum moisture content.

Most highway engineers classify soil materials according to the system approved by the American Association of State Highway Officials (*2*) (*7*). In this system, soil materials are classified in seven principal groups. The groups range from A–1, which is gravelly soil of high bearing capacity, to A–7, which consists of clay soil having low strength when wet. In each group, the relative engineering value of the soil material is indicated by a group index number. Group indexes range from 0 for the best materials to 20 for the poorest. The group index number is shown in parentheses, following the soil group symbol, in the next to last column in table 3.

Some engineers prefer to use the Unified soil classification system (*13*) (*7*). In this system, soil materials are identified as coarse grained (8 classes), fine grained (6 classes), or highly organic soils. The classification of the soils tested in the laboratory, according to the Unified system, is given in the last column in table 3.

TABLE 3.—*Engineering*

Soil name and location	Parent material	Bureau of Public Roads report No.	Depth	Horizon	Moisture-density		Discarded part (estimated) of field samples more than 3 inches in diameter
					Maximum dry density	Optimum moisture	
			Inches		*Lb. per cu. ft.*	*Percent*	*Percent*
Clarksville cherty silt loam: NW¼SE¼ sec. 34, T. 12 S., R. 9 E. (modal profile).	Cherty dolomitic limestone.	S33590	0–5	A_b	114	13	
		S33591	13–25	B_2	116	13	
		S33592	30–40+	C	114	13	1
SE¼NE¼ sec. 4, T. 16 S., R. 7 E. (grading toward Pace series).	Cherty dolomitic limestone.	S33593	3–5	A_2	93	22	1
		S33594	15–26	B_2	118	12	1
		S33595	26–72	C_1	115	14	2
Clarksville stony loam: (Mapping unit is Clarksville-Fullerton stony loams) SE¼NW¼ sec. 27, T. 13 S., R. 8 E. (lighter textured surface)	Cherty dolomitic limestone.	S33596	1–5	A_2	109	14	
		S33597	8–24	B_2	120	11	
		S33598	24–40	C	120	12	1
		S33599	50–60	C	118	13	1
Lehew shaly loam: (Mapping unit is Lehew-Montevallo soils) SW¼NE¼ sec. 5, T. 15 S., R. 8 E. (modal profile).	Shale and sandstone.	S33600	4–12	A_2	111	14	
		S33601	12–20	BC	112	15	
		S33602	20–30	C	110	16	
SE¼SW¼ sec. 11, T. 13 S., R. 9 E. (grading to Montevallo series).	Shale and sandstone.	S33603	0–5	A_p	111	16	
		S33604	7–30	C	107	20	
Lehew shaly very fine sandy loam: (Mapping unit is Lehew-Montevallo soils) SE¼NW¼ sec. 6, T. 15 S., R. 8 E.	Shale and sandstone.	S33605	4–13	A_2	111	16	
		S33606	13–17	C	110	18	
Rarden gravelly loam, shallow: SE¼SE¼ sec. 18, T. 14 S., R. 8 E. (modal profile).	Shale	S33607	2–7	A_1 and A_2.	114	13	
		S33608	9 23	B_2	90	27	
		S33609	23–30	C	102	21	
Rarden silt loam: SE¼SW¼ sec. 6, T. 15 S., R. 6 E. (grading toward Montevallo series).	Shale	S33610	2–6	A_2	107	18	
		S33611	6–14	B_2	108	18	
		S33612	18–28	C_{12}	108	16	
		S33613	28–63	D_r	118	13	
Rarden silt loam, shallow: SW¼SE¼ sec. 26, T. 14 S., R. 6 E. (thin surface soil).	Shale and sandstone	S33614	2–12	B_2	88	28	
		S33615	14 44	C	96	23	
Montevallo shaly silt loam: SE¼NW¼ sec. 35, T. 14 S., R. 6 E. (modal profile).	Shale and sandstone.	S33616	2–6	A_{12}	110	16	
		S33617	6–15	C	109	17	
NE¼SE¼ sec. 6, T. 15 S., R. 6 E. (grading toward Rarden series).	Shale and sandstone.	S33618	0–5	A_1	109	16	
		S33619	5–12	BC	112	16	

[1] Tests performed by the Bureau of Public Roads in accordance with standard procedures of the American Association of State Highway Officials (AASHO) (*2*).

[2] Mechanical analyses according to the American Association of State Highway Officials Designation T 88–54. Results by this procedure frequently may differ somewhat from results that would have been obtained by the soil survey procedure of the Soil Conservation Service (SCS). In the AASHO procedure, the fine material is analyzed by the hydrometer method and the various grain-size fractions are calculated on the basis of all the material, including that coarser than 2 millimeters in diameter. In the SCS soil survey procedure, the fine material is analyzed by the pipette method and the material coarser than 2 millimeters in diameter is excluded from calculations of grain-size fractions. The mechani-

test data [1]

Mechanical analyses [2]										Liquid limit	Plasticity index	Classification	
Percentage passing sieve [3]						Percentage smaller than [3]						AASHO [4]	Unified [5]
3-in.	¾-in.	No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 40 (0.42 mm.)	No. 200 (0.074 mm.)	0.05 mm.	0.02 mm.	0.005 mm.	0.002 mm.				
100	98	89	80	71	58	54	41	22	13	24	5	A 4(5)	ML CL.
100	94	80	70	60	52	50	38	37	17	28	9	A-4(3)	CL.
99	76	54	40	30	24	23	22	17	13	34	11	A 2-6(0)	GM-GC.
99	84	58	51	45	36	35	29	16	8	41	5	A 5(0)	GM.
99	87	67	55	47	41	40	35	24	15	25	6	A-4(1)	GM-GC.
95	84	72	63	51	44	43	37	28	19	28	7	A 4(2)	SM-SC.
100	96	78	62	46	35	34	25	14	8	25	3	A-2-4(0)	SM.
100	89	71	54	38	29	28	23	14	8	21	3	A-2-4(0)	SM.
99	92	75	61	41	27	25	22	15	10	21	3	A-2-4(0)	SM.
99	86	65	51	34	22	21	18	11	6	20	1	A-1-b(0)	SM.
--------	100	96	86	71	64	58	39	21	12	23	3	A-4(6)	ML.
--------	100	98	88	74	64	59	40	23	14	25	4	A-4(6)	ML-CL.
--------	100	99	91	79	67	63	43	26	16	28	5	A-4(6)	ML-CL.
--------	--------	--------	100	92	76	64	42	29	20	24	4	A-4(8)	ML-CL.
--------	--------	--------	100	89	73	64	50	40	33	33	10	A-4(8)	ML-CL.
100	99	98	96	89	74	61	38	21	13	24	2	A-4(8)	ML.
100	99	83	74	64	55	48	31	18	13	28	4	A-4(4)	ML-CL.
--------	100	98	86	69	55	52	36	18	11	25	3	A-4(4)	ML.
--------	100	95	88	82	79	78	70	64	57	81	43	A-7 5(20)	MH-CH.
100	98	88	76	66	59	58	55	47	40	63	31	A-7-5(15)	MH-CH.
--------	100	97	91	78	72	69	51	29	18	34	8	A-4(7)	ML.
--------	--------	--------	100	93	89	87	73	49	32	40	12	A 6(9)	ML.
--------	--------	--------	100	89	84	82	69	47	33	44	16	A-7-6(11)	ML-CL.
--------	100	90	74	65	59	56	44	25	15	32	10	A-4(5)	ML-CL.
--------	100	99	98	95	90	89	83	74	66	86	42	A-7-5(20)	MH.
--------	--------	--------	100	92	84	81	70	56	44	62	26	A-7-5(18)	MH.
--------	100	97	87	72	61	58	46	28	17	32	7	A 4(5)	ML-CL.
--------	100	95	84	70	60	58	46	32	22	37	11	A-6(5)	ML-CL.
100	89	70	62	53	46	43	28	17	12	36	9	A-4(2)	GM.
100	97	94	89	82	75	67	48	32	23	34	11	A-6(8)	ML-CL.

cal analyses used in this table are not suitable for use in naming textural classes for soils.

[3] Based on total material. Laboratory test data corrected for amount discarded in field sampling.

[4] Based on Standard Specifications for Highway Materials and Methods of Sampling and Testing (Pt. 1, Ed. 7): The Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes, AASHO. Designation M 145-49 (*2*).

[5] Based on the Unified Soil Classification System, Technical Memorandum No. 3-357, volume 1, Waterways Experiment Station, Corps of Engineers, March 1953 (*13*).

TABLE 3.—*Engineering*

Soil name and location	Parent material	Bureau of Public Roads report No.	Depth	Horizon	Moisture-density: Maximum dry density	Moisture-density: Optimum moisture	Discarded part (estimated) of field samples more than 3 inches in diameter
Philo fine sandy loam: (Mapping unit is Philo and Stendal fine sandy loams).			*Inches*		*Lb. per cu. ft.*	*Percent*	*Percent*
NW¼SE¼ sec. 3, T. 14 S., R. 8 E. (modal profile).	Alluvium	S33620	8–17	A_2	119	11	
		S33621	24–66	C_{bg}	123	11	
NW¼NW¼ sec. 13, T. 13 S., R. 9 E. (cemented substrata).	Alluvium	S33622	5–17	A_{21}	112	13	
		S33623	23–38	C_{11}	120	12	
		S33624	38–74	C_{12}	125	10	20
Philo silt loam: (Mapping unit is Philo and Stendal silt loams) SE¼NW¼ sec. 18, T. 15 S., R. 6 E. (grading toward Pope series).	Alluvium	S33625	0–10	A_p	108	17	
		S33626	18–62	C	109	17	

See footnotes on pages 24 and 25.

Soil Properties That Apply to Engineering

Brief descriptions of the soils and their estimated physical properties, usually to a depth of 6 feet or less, are given in table 4. The properties are estimated on the basis of field observations and experience and apply to Calhoun County only.

In the headings (table 4), depth from the surface refers to depth in the typical soil profile for the series, which is given in the section Descriptions of the Soils.

TABLE 4.—*Brief description of the soils*

Soil	Depth to high water table [1]	Depth to bedrock	Soil description	Dominant texture: Depth from surface	Dominant texture: USDA name
	Feet	*Feet*		*Inches*	
Altavista and Masada	2 or more	3 –12+	2.5 to 5 feet of moderately well to well drained silt loam and silty clay loam over stratified old general alluvium; underlain by shale or limestone.	0–8 8–36+	Silt loam Silty clay loam
Anniston	20 or more	2 –10+	2 to 10 feet of well-drained gravelly loam to clay loam over stratified local alluvium; limestone or shale bedrock.	0–7 7–72+	Gravelly loam Gravelly clay loam
Anniston and Allen	20 or more	2 –10+	2 to 10 feet of well-drained stony loam or stony clay loam over stratified local alluvium; limestone or shale bedrock.	0–7 7–72+	Stony loam Stony clay loam
Atkins	At surface most of year.	2 –6	2 to 6 feet of poorly drained silt loam or fine sandy loam over stratified general alluvium from shale or limestone; frequently flooded.	0–28 28–48+	Silt loam Stratified silt loam, sandy loam, and sandy clay.
Camp	2 or more	1.5– 5	1.5 to 5 feet of well-drained silt loam over stratified local alluvium; shale or limestone bedrock.	0–6 6–40+	Silt loam Silt loam or shaly silt loam.
Cane	20 or more	3+	2 to 3 feet of moderately well drained fine sandy loam or sandy clay loam over 1 to 4 feet of compact fine sandy loam containing sandstone and cherty gravel; shale or limestone bedrock.	0–5 5–27 27–40+	Fine sandy loam Fine sandy clay loam Fine sandy loam

See footnote at end of table.

test data [1]—Continued

Mechanical analyses [2]										Liquid limit	Plasticity index	Classification	
Percentage passing sieve [3]						Percentage smaller than [3]							
3-in.	¾-in.	No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 40 (0.42 mm.)	No. 200 (0.074 mm.	0.05 mm.	0.02 mm.	0.005 mm.	0.002 mm.			AASHO [4]	Unified [5]
------	------	------	100	98	64	54	35	19	13	19	3	A-4(6)	ML.
------	100	94	84	71	47	41	29	18	14	22	7	A-4(2)	SM-SC.
------	------	------	100	99	85	75	48	20	14	23	4	A-4(8)	ML-CL.
------	100	99	99	94	58	50	32	23	19	22	6	A-4(5)	ML-CL.
80	60	48	44	35	21	18	12	9	7	21	5	A-2-4(0)	GM-GC.
------	------	------	------	100	90	87	70	40	27	32	10	A-4(8)	ML-CL.
------	------	------	------	------	95	92	73	43	28	32	11	A-6(8)	CL.

Permeability is based on soil structure without compaction (*10*). Available water is an approximation of the capillary water in the soil when the flow downward by gravity has practically stopped. The pH vales indicate the degree of soil acidity (less than 7.0), or alkalinity (more than 7.0); the reaction either way, if extreme, can have an important bearing on structures or on soil-stabilization treatments. The shrink-swell potential of a soil is its tendency to change in volume when it is subjected to changes in moisture.

and their estimated physical properties

Classification		Percentage passing—			Permeability	Available water	pH	Shrink-swell potential
Unified	AASHO	200 sieve (0.074 mm.)	10 sieve (2.0 mm.)	4 sieve (4.7 mm.)				
					Inches/hr.	*Inches/ft. depth*		
ML or ML-CL	A-4 or A-6	70–80	95–100	100	0. 8– 2	1 – 1. 5	5. 1–5. 5	Low to moderate.
CL	A-6 or A-4	85–90	95–100	100	. 8– 2	1 – 1. 5	5. 1–5. 5	Low to moderate.
ML or CL	A-4	50–65	60–80	75–85	. 8– 2	1. 5– 2	5. 1–5. 4	Low.
CL or ML	A-4 or A-6	55–70	60–85	75–90	. 8– 2	1. 5– 2	4. 5–5	Low to moderate.
CL, GC	A-4 or A-6	45–60	60–75	70–80	. 8– 2	1 – 1. 5	5. 1–5. 4	Low.
CL or MH	A-4 or A-6	55–70	65–80	75–90	. 8– 2	1 – 1. 5	4. 5–5	Low to moderate.
ML or CL	A-6 or A-4	90–95	95–100	100	. 2– 0. 8	2 – 2. 4	5. 1–5. 5	Low to moderate.
ML, CL, SM, or SC.	A-6 or A-4	45–80	90–100	100	. 2– 0. 8	2 – 2. 4	5. 1–5. 5	Low.
ML or ML-CL	A-4 or A-6	60–70	90–100	100	. 8– 2	1 – 1. 5	5. 1–5. 5	Low to moderate
ML, CL	A-4 or A-6	50–70	85–95	95–100	. 8– 2	1 – 1. 5	5. 1–5. 5	Low to moderate.
SM, SC, ML, or CL.	A-4 or A-6	40–55	90–98	95–100	. 8– 2	1 – 1. 5	5. 1–5. 5	Low to moderate.
ML or CL	A-6 or A-4	50–65	93–98	95–100	. 8– 2	1 – 1. 5	5. 1–5. 5	Low to moderate.
SM, SC, ML, or CL	A-4 or A-6	45–60	85–95	90–98	. 2– 8	1 – 1. 2	5. 1–5. 5	Low.

TABLE 4.—*Brief description of the soils and*

Soil	Depth to high water table [1]	Depth to bedrock	Soil description	Dominant texture	
				Depth from surface	USDA name
	Feet	*Feet*		*Inches*	
Captina	1 to 3 (perched)	4+	1 to 3 feet of moderately well drained silt loam to silty clay loam over 4 to 20 inches of compact silt loam; underlain by shale or limestone.	0–6 6–21 21–37	Silt loam Silty clay loam Compact silty clay loam
Clarksville	20+	20+	1.5 to 3 feet of well-drained cherty silt loam to cherty silty clay loam; developed from deeply weathered, cherty dolomitic limestone; stones occur frequently below 3 feet.	0–5 5–30 30+	Cherty silt loam Cherty silty clay loam Cherty and silty clay loam.
Clarksville-Fullerton complexes.	20+	20+	1 to 3 feet of well-drained stony loam to stony silty clay loam; developed from deeply weathered, cherty dolomitic limestone.	0–6 6–24 24–40	Stony loam Stony silty clay loam Stones, chert, and silty clay loam.
Conasauga	10+	2 – 5+	1.5 to 3.5 feet of moderately well-drained silt loam and plastic silty clay; developed from weathered calcareous shale and limestone.	0–5 5–32	Silt loam Silty clay
Cumberland	20+	4 –20+	2 to 15 feet of well-drained gravelly loam and gravelly silty clay; underlain in places by beds of gravel or sand. Soil developed in old alluvium that washed from soil developed from limestone, chert, and shale.	0–7 7–40+	Gravelly loam Gravelly silty clay
Decatur and Cumberland.	20+	3 –20+	3 to 20 feet of well-drained loams to silty clays; developed in old alluvium that washed from soils developed from limestone, chert and shale; gravel and iron concretions are present below 2 feet in some places.	0–6 6–36+	Loam Silty clay
Dewey	20+	3 –15	2 to 4 feet of well-drained cherty silty clay loam to silty clay; developed from weathered cherty limestone and limestone and old alluvium that washed from soil developed from cherty limestone and limestone; chert gravel occurs on the surface and in the subsoil in places.	0–8 8–36+	Cherty silty clay loam Silty clay
Dunning	0	2 – 6+	2 to 4 feet of poorly drained silt loam to silty clay over stratified silt and clay; subject to frequent flooding.	0–12 12–50	Silt loam Silty clay
Enders	20+	1¾ – 6	1.75 to 6 feet of well-drained gravelly fine sandy loam to silty clay loam; developed from weathered shale and sandstone.	0–14 14–26 26–81	Gravelly fine sandy loam. Silty clay loam Silty clay to clay
Etowah	15+	2 – 6	2 to 6 feet of well-drained silt loam to silty clay; developed from old alluvium that washed from soil derived from limestone, chert, and sandstone; a few areas are gravelly.	0–8 8–36 36–72	Silt loam Silty clay loam Silty clay
Fullerton	20+	20+	1.5 to 4 feet of well-drained cherty silt loam to cherty silty clay; developed from cherty dolomitic limestone; many places have stones below depths of 3 feet.	0–7 7–34 34–72	Cherty silt loam Cherty silty clay. Cherty silty clay.
Georgeville and Tate	10+	1½ – 4	1.5 to 3.5 feet of well-drained silt loam to silty clay; developed from weathered mica schist, slate, or phyllite, or from local alluvium that washed from soils underlain by these materials.	0–5 5–24 24–36	Silt loam Silty clay Partly weathered slate
Gullied land			Variable soil; gullies 3 to 10 feet deep and 3 to 20 feet wide.		
Holston	20+	4 – 6+	2.5 feet of well-drained fine sandy loam to fine sandy clay loam; underlain in places by beds of gravel or sand. Soil has developed from old alluvium that washed from soils underlain by sandstone and shale or by limestone.	0–7 7–30	Fine sandy loam Fine sandy clay loam

See footnote at end of table.

their estimated physical properties—Continued

Classification		Percentage passing—			Permeability	Available water	pH	Shrink-swell potential
Unified	AASHO	200 sieve (0.074 mm.)	10 sieve (2.0 mm.)	4 sieve (4.7 mm.)				
					Inches/hr.	*Inches/ft. depth*		
CL or ML	A-4 or A-6	75–85	90–95	95–100	0.2–0.8	1–1.5	5.1–5.5	Moderate.
CL or ML	A-6 or A-4	75–85	90–98	95–100	.2–0.8	1–1.5	5.1–5.5	Moderate.
ML or CL	A-4 or A-6	85–90	95–100	95–100	.2–0.8	.5–1	5.1–5.5	Low to moderate.
ML or CL, SM or GM.	A-4, A-5, or A-2.	35–60	50–80	60–90	2–10	1–1.5	5.1–5.5	Low.
CL, SM, GM, or GC.	A-4	30–50	55–70	65–80	2–10	1–1.5	5.1–5.5	Low.
GM, GC, or SM	A-2	25–40	40–60	55–75	2–10	1–1.5	5.1–5.5	Low.
SM, GC, or GM	A-2 or A-4	30–40	55–65	75–85	2–10	.5–1.5	5.1–6	Low.
SM, GC, or GC	A-2 or A-4	25–45	50–60	70–80	2–10	.5–1.5	5.1–6	Low.
SM, GM, or GC	A-2 or A-4	20–45	55–65	75–85	2–10	.5–1.5	5.1–6	Low.
ML or CL	A-7 or A-6	70–80	95–100	95–100	.2–0.8	.5–1	5.1–5.5	Low to moderate.
MH or CH	A-7	80–90	95–100	95–100	.2–0.8	.5–1	7.4–7.8	High.
ML or CL	A-4 or A-6	50–65	75–90	80–95	.8–2	1.5–2	5.1–6	Moderate.
CL or MH-CH	A-4, A-6, or A-7.	60–75	80–90	80–95	.8–2	1–1.7	4.5–6	Moderate.
CL	A-6 or A-7	75–90	95–100	98–100	.8–3	2–2.4	5.1–6	Moderate.
CL or MH-CH	A-6 or A-7	85–95	100	100	.8–2	2–2.4	4.5–6	Moderate.
CL	A-4 or A-6	55–70	75–85	85–95	.8–2	2–2.4	4.5–5	Moderate.
MH or CH	A-6 or A-7	60–75	70–80	75–85	.8–2	2–2.4	4.5–5	Moderate.
ML or CL	A-4 or A-6	85–95	90–95	95–98	.2–0.8	.5–1	5.1–5.6	Low to moderate.
MH or CH	A-7	85–95	90–95	95–100	.2–0.8	.5–1	5.6–6	High.
CL or ML	A-4	50–60	70–80	80–90	.8–2	1–1.5	4.5–5	Low.
CL, CH, or MH	A-7	70–85	80–90	85–95	.8–2	1–1.5	4.5–5	Moderate.
MH or CH	A-7	70–85	80–90	85–95	.2–0.8	.5–1	4.5–5	High.
ML or CL	A-4 or A-6	80–85	90–100	95–100	.8–2	1.5–2	6.1–6.5	Moderate.
CL or ML	A-6 or A-7	85–90	90–100	95–100	.8–2	2–2.2	5.1–5.5	Moderate.
CL or ML	A-4, A-6 or A-7	85–90	90–100	95–100	.8–2	2–2.2	4.8–5.5	Moderate.
ML, CL	A-4	50–65	80–90	85–95	.8–2	1–1.5	5.1–5.5	Low.
MH, CH, or ML–CL.	A-6 or A-7	55–70	75–85	75–90	.8–2	1–1.5	5.1–5.5	Low to moderate.
MH, CH, or CL	A-7	50–70	55–75	60–80	.8–2	1–1.5	5.1–5.5	Low to moderate.
ML or CL	A-4 or A-6	55–75	85–95	95–100	.8–2	1–1.5	4.5–5	Low to moderate.
ML, CL, or ML–MH.	A-6 or A-7	60–75	80–95	90–95	.8–2	1–1.5	4.5–5	Moderate.
ML, CL, or ML-MH.	A-6 or A-7	50–70	75–85	80–90	.8–2	1–1.5	4.5–5	Moderate.
SM or ML	A-4	40–50	90–100	95–100	.8–2	1–1.5	5.1–5.5	Low.
SM or CL	A-4	45–55	95–100	95–100	.8–2	1–1.5	4.5–5	Low.

TABLE 4.—*Brief description of the soils and*

Soil	Depth to high water table [1]	Depth to bedrock	Soil description	Dominant texture	
				Depth from surface	USDA name
	Feet	*Feet*		*Inches*	
Huntington	0 to 2 (perched)	6–20	2 to 6 feet of well-drained silt loam; developed from local alluvium that washed from soils underlain by limestone, chert, or shale.	0–7 7–40	Silt loam Silt loam or silty clay loam.
Jefferson	20+	2 – 4+	1.5 to 4 feet of well-drained gravelly fine sandy loam to gravelly fine sandy clay; developed from local alluvium that washed from soils underlain by sandstone and shale.	0–8 8–40+	Gravelly fine sandy loam Gravelly fine sandy clay
Landisburg	8+	20+	1.5 to 3 feet of well-drained cherty silt loam to cherty silty clay over 3 to 5 feet of compact cherty silty clay loam; developed from old local alluvium that washed from soils underlain by cherty limestone.	0–6 6–26 26–40	Cherty silt loam Cherty silty clay Cherty silty clay loam
Lee	0 to 2 (perched)	5 –20	1 to 4 feet of poorly drained silt loam to cherty silty clay over stratified silt and chert or clay; underlain by chert or limestone; subject to frequent flooding.	0–19 19–40+	Cherty silt loam Cherty silty clay
Lehew-Montevallo complexes.	20+	1 – 2.5+	1 to 2.5 feet of well-drained shaly loam; developed from shale and platy sandstone with occasional limestone ledge; shallow, weakly developed soils.	0–12 12–20	Shaly loam Shaly loam
Lindside	1 to 2	5+	2 to 4 feet of moderately well to somewhat poorly drained silt loam over silty clay loam or stratified alluvium; frequently flooded.	0–25 25–31+	Silt loam Silty clay loam
Linker	20+	2.5– 7+	2.5 to 7 feet of well-drained gravelly fine sandy loam to fine sandy clay; developed from sandstone and shale.	0–10 10–60	Gravelly fine sandy loam Fine sandy clay
Lobelville	1 to 2	4+	1 to 3 feet of somewhat poorly drained cherty silt loam and silt loam over compact cherty silty clay; underlain by alluvium that washed from cherty limestone soils; frequently flooded.	0–26 26–42	Silt loam or cherty silt loam. Cherty silty clay
Locust	2 to 6+	2 – 3	1 to 2.5 feet of moderately well drained gravelly fine sandy loam to fine sandy clay loam over a compact layer 4 to 30 inches thick; developed from old local alluvium that washed from soil underlain by chert, shale, and sandstone.	0–6 6–22 22–27	Gravelly fine sandy loam Fine sandy clay loam Silty clay loam
Melvin	0 to 1	2.5– 8	2.5 to 8 feet of poorly drained silt loam to silty clay loam alluvium; underlain by limestone, shale, or cherty limestone; flooded frequently.	0–26 26–42+	Silt loam Silty clay loam
Minvale	20+	20+	2 to 4.5 feet of well-drained cherty silt loam to cherty silty clay; developed from old local alluvium that washed from soils underlain by cherty limestone.	0–7 7–36	Cherty silt loam Cherty silty clay to cherty silty clay loam.
Monongahela	4+	3 – 10+	1 to 2.5 feet of moderately well drained loam to fine sandy clay loam over a compact layer 6 to 24 inches thick; developed from old alluvium that washed from soils underlain by sandstone and shale.	0–5 5–20 20–38+	Loam Fine sandy clay loam Light fine sandy clay loam.
Montevallo	20+	1 – 1.5	1 to 1.5 feet of well-drained shaly silt loam; developed from interbedded shale and fine-grained sandstone; shallow, weakly developed soil.	0–6 6–15	Shaly silt loam Shaly silty clay loam
Muskingum	20+	1 – 2	1 to 2 feet of well-drained stony fine sandy loam; developed from sandstone and shale; sandstone and quartzite stones occur on and in the soil.	0–9 9–20	Stony fine sandy loam Stony loamy fine sand

See footnote at end of table.

their estimated physical properties— Continued

Classification		Percentage passing—			Permeability	Available water	pH	Shrink-swell potential
Unified	AASHO	200 sieve (0.074 mm.)	10 sieve (2.0 mm.)	4 sieve (4.7 mm.)				
					Inches/hr.	*Inches/ft. depth*		
ML or CL	A-4 or A-6	80-90	90-100	98-100	0. 8- 2	2. 2- 2. 5	5. 1-5. 5	Low to moderate.
ML or CL	A-6 or A-4	85-95	95-100	98-100	. 8- 2	2. 2- 2. 5	4. 5-5	Moderate.
SM or GM	A-4 or A-2	30-45	60-80	80-90	. 8- 2	. 5- 1	5. 1-5. 5	Low.
SC or GC	A-4 or A-6	35-50	60-85	80-95	. 8- 2	. 5- 1	5. 1-5. 5	Low to moderate.
ML, CL, or GM	A-4, A-5, or A-6.	40-60	50-80	55-85	. 2- 0. 8	1 - 1. 4	5. 1-5. 5	Low.
CL or GC	A-4 or A-6	40-55	55-85	65-85	. 2- 0. 8	1 - 1. 4	5. 1-5. 5	Low.
GM or GC	A-2, A-4, or A-6.	25-50	55-70	60-75	. 2- 0. 8	1 - 1. 4	5. 1-5. 5	Low.
ML or CL	A-4 or A-6	50-60	75-85	80-95	. 2- 0. 8	. 5- 1	5. 1-6	Low.
GM or GC	A-4 or A-2	30-50	45-75	55-80	. 2- 0. 8	. 5- 1	5. 1-5. 5	Low to moderate.
ML	A-4	64	86	96	. 8-10	. 5- 1	5. 6-6	Low.
ML or CL	A-4 or A-6	64	88	98	. 8-10	. 5- 1	5. 6-6	Low to moderate.
ML or CL	A-4 or A-6	90-95	95-100	100	. 8- 2	2 - 2. 4	5. 1-6	Moderate.
CL or ML	A-6 or A-4	85-95	95-100	100	. 8- 3	2 - 2. 4	5. 1-5. 5	Moderate to high.
SM, ML, or CL	A-4 or A-6	40-55	55-75	80-90	. 8- 3	1 - 1. 5	5. 5-4. 5	Low.
CL or ML	A-6 or A-4	50-60	85-95	90-100	. 8- 3	1 - 1. 5	4. 5-5	Moderate.
ML, CL, SM, or SC.	A-4 or A-6	40-55	55-70	65-80	. 2- 0. 8	1 - 1. 5	5. 1-5. 5	Low.
ML, CL, SM, or GC.	A-2, A-4, or A-6.	25-55	40-70	60-80	. 2- 0. 8	1 - 1. 5	5. 1-5. 5	Moderate.
SM or CL	A-4 or A-6	40-55	60-75	70-85	. 2- 0. 8	1 - 1. 5	5. 1-5. 5	Low.
CL or ML	A-4 or A-6	55-70	65-75	80-90	. 2- 0. 8	1 - 1. 5	4. 5-5	Low.
SM, GM, or GC	A-6 or A-4	35-45	50-65	60-75	. 2- 0. 8	1 - 1. 5	4. 5-5	Low.
ML or CL	A-4 or A-6	60-75	80-95	90-100	. 8- 2	2 - 2. 4	5. 1-5. 5	Moderate.
ML or CL	A-6 or A-4	65-75	85-95	90-100	. 2- 0. 8	2 - 2. 4	5. 6-6	High.
SM, SC, or GC	A-4 or A-2	30-50	60-75	75-85	2 -10	1 - 1. 5	5. 1-5. 5	Low.
GC or SC	A-4 or A-6	35-50	55-75	70-80	2 -10	1 - 1. 5	4. 5-5	Low to moderate.
ML, CL, or SC	A-4	45-75	95-100	100	. 2- 0. 8	. 5- 1. 5	5. 1-5. 5	Low.
CL or ML	A-4	75-80	95-100	100	. 2- 0. 8	. 5- 1. 5	5. 1-5. 5	Low to moderate.
CL or ML	A-4 or A-6	65-70	80-95	100	. 2- 0. 8	. 5- 1	5. 1-5. 5	Low.
ML or CL	A-4	60	87	97	2 -10	. 5-1	5. 1-5. 5	Low.
ML or CL	A-6	61	84	95	2 -10	. 5-1	5. 1-5. 5	Moderate.
SM or SC	A-4	35-45	90-95	90-95	2 -10	. 5-1	4. 5-5	Low.
SM or SC	A-2	25-35	80-90	85-95	2 -10	. 5-1	4. 5-5	Low.

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TABLE 4.—*Brief description of the soils and*

Soil	Depth to high water table [1]	Depth to bedrock	Soil description	Dominant texture	
				Depth from surface	USDA name
	Feet	*Feet*		*Inches*	
Nolichucky	20+	4 – 7+	2 to 6 feet of well-drained gravelly fine sandy loam to fine sandy clay; developed from old alluvium that washed from acid sandstone and shale; stratified sand, gravel, and clay occurs in many places beneath these soils.	0–6 6–46+	Gravelly fine sandy loam Fine sandy clay
Philo and Stendal	1 to 2	6+	2 to 5.5 feet of moderately well drained to somewhat poorly drained fine sandy loam or fine sandy clay loam; developed from alluvium that washed from sandstone and shale soils; frequently flooded.	0–66	Fine sandy loam to fine sandy clay loam.
Pope	2 to 3	8+	3 to 8 feet of well-drained silt loam or fine sandy loam over stratified alluvium that washed from sandstone and shale; flooded frequently.	0 29 29–40	Silt loam Silty clay loam
Purdy	0 to 1 (perched)	5+	1.5 to 2.5 feet of poorly drained silt loam to fine sandy clay over a compact or heavy clay layer; developed from old alluvium that washed from sandstone and shale soils; covered by water after rains of high intensity or long duration.	0–6 6–30	Silt loam Fine sandy clay
Rarden	20+	1. 5– 4	0.7 to 2.5 feet of moderately well drained silt loam to silty clay or clay; developed from interbedded shale, platy sandstone, and limestone; surface of some areas has platy sandstone gravel 3 inches in diameter.	0–14 14–44	Silt loam to silty clay or clay. Shaly clay
Robertsville	0 to 1	3 – 6+	1 to 2 feet of poorly drained silt loam to silty clay loam over silty clay or over a compact layer; underlain by stratified old alluvium that washed from soils underlain by limestone, shale, or chert.	0–8 8–18 18–50+	Silt loam Silty clay loam Silty clay
Sequatchie	6+	8+	2 to 4.5 feet of well-drained fine sandy loam or gravelly fine sandy loam to fine sandy clay loam; underlain in places by beds of gravel or sand. Soil has developed from old alluvium that washed from soils underlain by sandstone and shale; sand and gravel layers often separate the solum from the underlying shale or limestone.	0–9 9–38	Fine sandy loam Fine sandy clay loam
Stony rough land, limestone.	20+	0 – 3	0 to 3 feet of moderately well drained silty clay with ledges and boulders of limestone protruding through surface.	0–3	Silty clay or clay
Stony rough land, sandstone.	20+	0 – 2. 5	0 to 2.5 feet of well-drained loamy fine sand with ledges and boulders of sandstone protruding through surface.	0–2. 5	Loamy fine sand or fine sandy loam.
Stony rough land, slate.	20+	0 – 3	0 to 3 feet of well-drained silt loam to silty clay loam with ledges of slate protruding through surface.	0–6 6–10	Silt loam Silty clay loam
Taft	0 to 2 (perched)	4+	1 to 2 feet of somewhat poorly drained silt loam to silty clay loam over a compact layer of silt loam; developed from old alluvium that washed from soil underlain by limestone, chert, and shale.	0–8 8–23 23–31	Silt loam Silty clay loam Silt loam

See footnote at end of table.

their estimated physical properties—Continued

Classification		Percentage passing—			Permeability	Available water	pH	Shrink-swell potential
Unified	AASHO	200 sieve (0.074 mm.)	10 sieve (2.0 mm.)	4 sieve (4.7 mm.)				
					Inches/hr.	*Inches/ft. depth*		
SM or CL	A-4	40–50	80–90	90–95	0.8–2	1–1.5	4.5–5	Low.
ML or CL	A-6	55–70	85–95	95–100	.2–0.8	1–2.4	4.5–5	Moderate.
ML or CL	A-4 or A-6	40–70	75–100	100	.8–2	2–2.4	5.1–5.5	Low.
ML or CL	A-4 or A-6	60–75	90–95	95–100	.8–2	2–2.4	4.5–5.5	Low to moderate.
CH or MH	A-6 or A-7	80–90	95–100	100	.8–2	2–2.4	5.1–5.5	Moderate.
ML or CL	A-4 or A-6	60–70	85–95	95–100	.2–0.8	.5–1	5.1–5.5	Low to moderate.
CL, ML, or SC	A-6 or A-7	50–60	85–95	95–100	.2–0.8	.5–1	5.1–5.5	Moderate.
MH, CL, or CH	A-6 or A-7	65–85	85–95	95–100	.2–0.8	.5–1	4.5–5.5	High to moderate.
MH or CH	A-7	55–65	70–80	80–90	.2–0.8	.5–1	4.5–5.5	High.
ML or CL	A-4 or A-6	70–80	90–95	95–100	.2–0.8	1.5–2	4.5–5	Moderate.
ML or CL	A-6 or A-7	80–90	95–100	95–100	.2–0.8	1–1.6	5.1–5	Moderate to high.
CL, CL or CH	A-6 or A-7	80–90	95–100	95–100	.2–0.8	1–1.6	5.1–5.5	High.
SM or SC	A-4 or A-6	35–50	90–100	95–100	.8–2	1–2	5.1–5.5	Low.
SC or CL	A-6 or A-7	40–60	90–100	95–100	.8–2	1–2	5.1–5.5	Low to moderate.
CH or MH	A-7	90–100	90–100	90–100	.2–0.8	.5–1.5	5.1–7	Moderate to high.
GM, GC, or SM	A-2 or A-4	20–40	75–90	90–100	2–10	.5–1	4.5–5	Low.
ML, CL, or SC	A-4 or A-6	45–66	70–80	80–90	2–10	.5–1	4.5–5	Low.
CL or CH	A-6 or A-7	60–80	70–80	90–100	.8–2	.5–10	4.5–5	Moderate.
ML or CL	A-4 or A-6	60–70	95–100	100	.2–0.8	1.5–2	5.1–5.5	Low.
CH or MH	A-7	80–90	95–100	100	.2–0.8	1–1.6	5.1–5.5	Moderate.
ML or CL	A-4 or A-6	55–65	85–95	95–100	.2–0.8	1–1.6	5.1–5.5	Moderate.

TABLE 4.—*Brief description of the soils and*

Soil	Depth to high water table [1]	Depth to bedrock	Soil description	Dominant texture	
				Depth from surface	USDA name
	Feet	*Feet*		*Inches*	
Talladega	20+	1 – 2.5+	1 to 2.5 feet of well-drained loam to silty clay loam; developed from slate, mica schist, and phyllite; some places have a few pieces of quartz gravel and a few stones on and in the soil.	0–7 7–20	Loam Silty clay loam
Tate	2 to 10+	2 – 6+	2 to 6 feet of well-drained gravelly silt loam to silty clay loam developed from old local alluvium that washed from soils underlain by slate, mica schist, and phyllite.	0 6 6 52	Gravelly silt loam Slaty silty clay loam
Tyler	1 to 3	1 – 8+	1 to 2 feet of somewhat poorly drained silt loam to fine sandy clay loam over a compact layer of light silty clay loam; developed from old alluvium that washed from soils underlain by sandstone and shale.	0–6 6–20 20–40	Silt loam Fine sandy clay loam Light silty clay loam

[1] The water table can normally be expected to rise to near the surface in winter.

The suitabilities of the soils for earth construction and soil characteristics that affect engineering work are shown in table 5. The soils were evaluated on the basis of test data shown in table 3, the estimates shown in table 4, and experiences in field use.

Stony rough land occurs on steep mountainous topography and is underlain by hard rock at depths of 1 to 3 feet. Roads should be so located on this land type that a minimum amount of excavation will be required.

The cherty residuum of the Clarksville and Fullerton soils and the substratum of the Minvale, Landisburg, Lee, and Lobelville soils contain gravel that could be used as road subgrade material.

The Huntington, Atkins, Lee, Lindside, Philo, Stendal, Pope, and Tyler soils occur on flood plains, and they are subject to occasional or frequent flooding. Embankments

TABLE 5.—*The suitabilities of the soils for earth construction*

Soil series	Map symbols	Suitability for grading when wet	Suitability of soil for—					Soil characteristics affecting—	
			Septic tanks	Road subgrade [1]	Road fill	Topsoil [2]	Sand and gravel	Construction of highways: Road cuts	Drainage
Altavista and Masada.	AaA, AaB2	Fair	Fair	Poor to fair.	Fair	Fair in surface layer.	Some places are good at depths of 40 to 50 inches.	3 to 12 feet of stratified silty clay and gravel.	Seasonal high water table.
Anniston and Allen.	AbB3 AbC3, AbD3, AbE3, AcA, AcB2, AcC2, AcD2, AcE2, AdC, AdE.	Good	Good	Good to fair.	Good	Good in surface layer.	Fair to poor.	2 to 8 feet + of gravelly or stony clay loams.	Good
Atkins and Stendal.	AkA, AsA	Poor	Poor	Poor	Fair	Good in surface layer.	Poor	5 feet + of stratified silt and sand.	High water table most of year.
Camp	CaB	Fair to poor.	Fair	Poor	Fair	Good	Poor	1.3 to 5 feet of silt loam over shale.	Seasonal high water table.

See footnotes at end of table.

their estimated physical properties—Continued

Classification		Percentage passing			Permeability	Available water	pH	Shrink-swell potential
Unified	AASHO	200 sieve (0.074 mm.)	10 sieve (2.0 mm.)	4 sieve (4.7 mm.)				
					Inches/hr.	*Inches/ft. depth*		
ML, CL, or SC	A-4 or A-6	45-60	70-80	80-95	2 -10	0.5 1	4.5-5	Low.
CL or ML	A-4 or A-6	60-80	70-80	85-95	2 -10	.5- 1	4.5-5	Moderate.
ML, CL, or SC	A-4 or A-6	45-60	70-80	80-90	.8- 2	1 - 1.5	4.5-5	Low.
CL, CL or SC	A-6 or A-7	45-60	70-80	85-95	.8- 2	1 - 1.5	5.1-5.5	Moderate.
ML or CL	A-4 or A-6	80-85	90-100	100	.2- 0.8	.5- 1	5.1-5.5	Low to moderate.
SC or CL	A-6 or A 7	35 55	90-100	100	.2 0.8	.5- 1	5.1-5.5	Low to moderate.
SC or CL	A-6 or A-7	75-85	95-100	100	.2- 0.8	.5- 1	5.1-5.5	Low to moderate.

are needed to keep roads on these low lands above floods.

Many soils have a perched water table at shallow depths; consequently, a survey should determine the need for interceptor ditches and underdrains. Seepage in the back slopes of cuts may cause the overlying material to slump or slide. The perched water table may decrease the bearing capacity of the foundation soil below the pavement and cause it to deteriorate. This water may be intercepted by the use of deep side ditches.

The plasticity of the Conasauga and Rarden soils makes them very difficult to work in wet weather. In places beds of gravel or gravel and sand are under the Nolichucky, Holston, Sequatchie, and some of the Cumberland and Allen soils.

and soil characteristics that affect engineering work

Soil characteristics affecting—Continued					Waterway problems	Comments
Construction of farm ponds			Irrigation	Use of terraces and diversions		
Impounding area	Embankments	Agricultural drainage				
Fairly impervious.	Low to moderate strength and stability.	Moderately permeable.	Slow infiltration; moderate water-holding capacity.	Needed on slopes of 3+ percent; fairly easy to build and maintain.	May need shaping and vegetation.	Seasonal high water table in some places.
Excess seepage	Adequate strength and stability.	Moderately permeable.	Medium infiltration; high water-holding capacity.	Needed; fairly easy to build and maintain.	Vegetation needed; shaping may be needed.	
Fairly impervious; high water table.	Low strength and stability.	Slowly permeable; high water table.	Slow to medium infiltration; high water-holding capacity.	Structures not needed.	Waterways not needed.	High water table.
Fairly impervious.	Low strength and stability.	Moderately permeable.	Medium infiltration; moderate water-holding capacity.	Need protection from higher slopes.	Sedimentation	Seasonal seepage in some places.

TABLE 5.—*The suitabilities of the soils for earth construction and*

Soil series	Map symbols	Suitability for grading when wet	Suitability of soil for — Septic tanks	Road subgrade [1]	Road fill	Topsoil [2]	Sand and gravel	Soil characteristics affecting — Construction of highways: Road cuts	Drainage
Cane	CbB2, CbC2	Good	Poor	Good	Good	Good in surface soil.	Poor	3 to 10 feet of sandy loam and sandy clay loam over shale or sandstone.	Good except for short periods.
Captina	CcB, CcB2	Fair	Poor	Fair to poor.	Fair	Good in surface soil.	Unsuitable	3 feet + of silt loam to cherty clay loam over limestone.	Seasonal high water table; perched.
Clarksville [3]	CkB, CkC, CkC2, CkD, CkE.	Fair to good.	Good	Excellent.	Excellent.	Poor	Unsuitable	3 to 20 feet of cherty silty clay.	Good
Conasauga	CnB2	Poor	Poor	Poor to very poor.	Poor	Poor	Unsuitable	2.5 to 3.5 feet of plastic clay over shale and limestone.	Seasonal high water table.
Cumberland	CoB2, CrB3, CrC3, CrD3.	Poor	Good	Fair to poor.	Fair to good.	Good in surface soil.	Unsuitable	2 to 8 feet of red clay over stratified material.	Good
Decatur and Cumberland.	DcB3, DcC3, DcD3, DdA, DdB2, DdC2, DdD2.	Poor	Good	Fair to poor.	Fair to good.	Good in surface soil.	Unsuitable	2 to 8 feet of red clay over limestone or stratified material.	Good
Dewey	DeC3, DeD3, DsB3, DsC3.	Poor	Good	Fair to poor.	Fair to good.	Good in surface soil.	Unsuitable	2 to 8 feet of clay over chert or limestone.	Good
Dunning	DuA	Poor	Poor	Poor to very poor.	Poor	Fair in surface layer.	Unsuitable	2 to 6 feet of plastic clay.	High water table.
Enders	EnB2, EnC2, EnD.	Fair	Good	Fair to poor.	Good	Good in surface soil.	Unsuitable	20 to 36 inches of silty clay over shale.	Good

See footnotes at end of table.

soil characteristics that affect engineering work—Continued

Soil characteristics affecting—Continued: Construction of farm ponds: Impounding area	Construction of farm ponds: Embankments	Construction of farm ponds: Agricultural drainage	Irrigation	Use of terraces and diversions	Waterway problems	Comments
Impervious	Moderate to adequate strength and stability.	Slowly permeable.	Medium infiltration; moderate water-holding capacity.	Needed; easy to build and maintain.	Vegetation needed; shaping may be needed.	Fragipan at depths of 21 to 36 inches; silting is a problem in terraces and waterways.
Impervious	Low strength and stability.	Slowly permeable.	Medium infiltration; moderate water-holding capacity.	Needed on slopes of 3+ percent; fairly easy to build and maintain.	Vegetation needed.	Fragipan at depths of 14 to 34 inches.
Excess seepage	Adequate strength and stability.	Rapidly permeable.	Medium infiltration; moderate to low water-holding capacity.	Needed; moderately difficult to build and maintain.	Vegetation needed; moderately difficult to shape.	Very cherty; stones below surface are often a problem.
Impervious	Low to moderate strength and stability.	Slowly permeable.	Slow infiltration; low water-holding capacity.	Difficult to build and maintain.	Stabilization needed.	Subsoil contains plastic clay.
Excess seepage	Low strength and stability.	Moderately permeable.	Medium infiltration; high water-holding capacity.	Moderately difficult to difficult to build and maintain.	Vegetation needed; shaping may be needed.	Terrace layout is a problem because of undulating topography; silting is a problem in the maintenance of terraces.
Excess seepage	Low strength and stability.	Moderately permeable.	Medium infiltration; high water-holding capacity.	Moderately difficult to difficult to build and maintain.	Vegetation needed; shaping needed in places.	Terrace layout is a problem because of undulating topography; silting is a problem in the maintenance of terraces.
Excess seepage	Low strength and stability.	Moderately permeable.	Medium infiltration; high water-holding capacity.	Difficult to build and maintain.	Vegetation needed; shaping generally required.	Silting is a problem in the maintenance of terraces.
Impervious	Low strength and stability.	Slowly permeable.	Slow infiltration; low water-holding capacity.	Structures not needed.	Waterways not needed.	Plastic clay.
Fairly impervious.	Moderate strength and stability.	Moderately permeable.	Rapid to medium infiltration; moderate water-holding capacity.	Needed; easy to build and maintain.	Vegetation needed.	None.

TABLE 5.—*The suitabilities of the soils for earth construction and*

Soil series	Map symbols	Suitability for grading when wet	Suitability of soil for—					Soil characteristics affecting— Construction of highways	
			Septic tanks	Road subgrade [1]	Road fill	Topsoil [2]	Sand and gravel	Road cuts	Drainage
Etowah	Eta, EtB2	Poor	Good	Fair to poor.	Fair to good.	Good in surface soil.	Unsuitable	2 to 5 feet of silty clay loam over stratified material.	Good
Fullerton [3]	FcB, FcC2, FcD2, FcE, FlC3, FlD3, FlE3.	Good	Good	Good	Excellent.	Good in surface soil.	Unsuitable	3 to 10 feet of cherty silty clay.	Good
Georgeville and Tate.	GeC2	Fair	Fair	Fair to poor.	Good	Very good in surface soil.	Unsuitable	1.5 to 3.5 feet of silty clay over schist.	Good
Holston	HoB2, HoC2	Fair to good.	Good	Fair to poor.	Good	Good in surface soil.	Some places are good at depths of about 40 inches.	2.5 to 4 feet of sandy loam over shale, limestone, or stratified material.	Good
Huntington	HuA	Poor	Poor	Poor	Fair	Good	Unsuitable	6 to 20 feet of silt loam over limestone.	Seasonal high water table.
Jefferson	JeB2, JeC2, JeD2, JfB, JfD.	Good	Good	Good	Good	Very good in surface soil.	Poor	1.5 to 4 feet of gravelly sandy loam over sandstone, shale, or limestone.	Good
Landisburg	LaB2, LaC2	Good	Poor	Good	Good	Good in surface soil.	Unsuitable	20 feet + of cherty silty clay loam.	Good
Lee	LcA, LeA	Poor	Poor	Poor to fair.	Fair	Fair in surface soil.	Unsuitable	1 to 4 feet of silt loam to cherty silty clay over beds of chert or silt.	High water table.
Lehew-Montevallo soils.	LhC2, LhD2, LhE.	Good	Poor	Fair to poor.	Good	Good in surface layer.	Unsuitable	1 to 2.5 feet of shaly loam over shale.	Good
Lindside	LkA	Poor	Poor	Poor	Fair	Good in surface layer.	Unsuitable	4.15 feet of silt loam over limestone.	Seasonal high water table.

See footnotes at end of table.

soil characteristics that affect engineering work— Continued

Soil characteristics affecting Continued					Waterway problems	Comments
Construction of farm ponds			Irrigation	Use of terraces and diversions		
Impounding area	Embankments	Agricultural drainage				
Fairly impervious.	Low strength and stability.	Moderately permeable.	Medium infiltration; high water-holding capacity.	Needed on sloping areas; fairly easy to build and maintain.	Shaping and vegetation needed.	Sedimentation is a problem in level waterways.
Excess seepage	Moderate strength and stability.	Moderately permeable.	Medium infiltration; moderate water-holding capacity.	Fairly easy to build and maintain.	Vegetation needed; some shaping needed.	Where severely eroded, silting of terraces is a problem.
Fairly impervious.	Moderate to low strength and stability.	Moderately permeable.	Medium infiltration; moderate water-holding capacity.	Fairly easy to build and maintain.	Vegetation needed.	Silting of terraces is a problem.
Excess seepage	Adequate strength and stability.	Moderately permeable.	Medium infiltration; moderate to high water-holding capacity.	Easy to build and maintain.	Vegetation needed; shaping may be needed.	
Excess seepage; lime sinks.	Low strength and stability; moderate permeability.	Moderately permeable.	Medium infiltration; high to moderate water-holding capacity.	Needs protection from higher slopes.	Sedimentation	May have a seasonal high water table.
Excess seepage	Adequate strength and stability.	Moderately permeable.	Medium infiltration; high water-holding capacity.	Fairly easy to build and maintain.	Vegetation needed.	
Excess seepage	Moderate strength and stability.	Slowly permeable.	Medium infiltration; low water-holding capacity.	Moderately difficult to build and maintain.	Vegetation needed; shaping may be needed.	Fragipan at depths of 20 to 30 inches.
Excess seepage	Low strength and stability.	Slowly permeable.	Slow infiltration; low water-holding capacity.	Structures not needed.	Waterways not needed.	Seasonal high water table.
Impervious	Modern strength and stability.	Moderately to rapidly permeable.	Medium infiltration; low water-holding capacity.	Difficult to build and very difficult to maintain.	Thick vegetation needed.	Shallow, or AC, soils; highly erodible.
Excess seepage	Low strength and stability.	Slowly permeable	Medium infiltration; moderate water-holding capacity.	Structures not needed.	Waterways not needed.	Seasonal high water table.

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TABLE 5.—*The suitabilities of the soils for earth construction and*

Soil series	Map symbols	Suitability for grading when wet	Suitability of soil for—					Soil characteristics affecting—	
			Septic tanks	Road subgrade [1]	Road fill	Topsoil [2]	Sand and gravel	Construction of highways: Road cuts	Construction of highways: Drainage
Lindside and Newark.	LIA	Poor	Poor	Poor	Fair	Good	Unsuitable	2 to 4 feet of silt loam over stratified silt and clay.	Seasonal high water table.
Linker	LnC2	Good	Good	Good to fair.	Good	Very good in surface soil.	Underlain by a weak sandstone in places.	2.5 to 7 feet of fine sandy loam over sandstone.	Good
Lobelville	LoA, LpA	Poor	Poor	Good	Good	Good in surface soil.	Unsuitable	1 to 3 feet of cherty silt loam or silt loam over stratified material.	Seasonal high water table.
Locust	LsA, LsB2, LsC2.	Fair	Poor	Good to fair.	Good	Very good in surface soil.	Unsuitable	1 to 2.5 feet of gravelly sandy loam and sandy clay over a fragipan.	Seasonal high water table.
Melvin	MaA	Poor	Poor	Poor	Fair	Fair	Unsuitable	2.5 to 5 feet of silt loam over stratified material.	High water table; frequently flooded.
Minvale	MnB2	Good	Good	Good	Good	Good in surface soil.	Has high percentage of chert gravel.	20 feet + of cherty and stony silty clay.	Very good
Monongahela	MoA MoB2	Fair to poor.	Poor	Good to fair.	Good	Good in surface soil.	Fair	3 to 10 feet + of stratified sandy clay loam and sandy loam.	Seasonal high water table.
Montevallo [4]	MsD, MsE MtC3, MtD3.	Fair	Poor	Poor to fair.	Fair	Fair in surface layer.	Unsuitable	1 to 1.5 feet of shaly silt loam over shale.	Good
Muskingum	MuD, MuE.	Good	Poor	Good	Good	Fair in surface soil.	Fair to poor.	1 to 2 feet of stony fine sandy loam over sandstone.	Good
Nolichucky	NcB2, NcC2	Good	Good	Good	Good	Very good in surface soil.	Good	4 to 7 feet + of gravelly sandy loam or gravelly clay loam.	Good

See footnotes at end of table.

soil characteristics that affect engineering work—Continued

Soil characteristics affecting—Continued					Waterway problems	Comments
Construction of farm ponds			Irrigation	Use of terraces and diversions		
Impounding area	Embankments	Agricultural drainage				
Fairly impervious.	Low strength and stability.	Moderately permeable.	Medium to slow infiltration; high water-holding capacity.	Structures not needed.	Waterways not needed.	Soluble limestone; seasonal high water table.
Fairly impervious.	Adequate strength and stability.	Moderately permeable.	Medium infiltration; moderate water-holding capacity.	Easy to build and maintain.	Vegetation needed.	
Excess seepage	Low to moderate strength and stability.	Slowly permeable	Medium infiltration; low water-holding capacity.	Structures not needed.	Waterways not needed.	Seasonal high water table.
Fairly impervious.	Moderate to adequate strength and stability.	Slowly permeable	Medium infiltration; low to moderate water-holding capacity.	Needed on slopes; easy to build and maintain.	Vegetation needed; shaping may be needed.	Fragipan at depths of 15 to 30 inches.
Fairly impervious.	Low strength and stability.	Slowly permeable	Slow to medium infiltration; high water-holding capacity.	Structures not needed.	Waterways not needed.	High water table.
Excess seepage	Moderate strength and stability.	Rapidly permeable.	Medium infiltration; moderate water-holding capacity.	Fairly easy to build and maintain.	Vegetation needed; shaping may be needed.	Silting is often a problem in the maintenance of terraces.
Fairly impervious.	Moderate strength and stability.	Slowly permeable	Medium infiltration; low to moderate water-holding capacity.	Needed on sloping areas; fairly easy to build and maintain.	Vegetation needed; shaping may be needed.	Level areas not erodible; fragipan at depths of 15 to 32 inches.
Impervious	Moderate strength and stability.	Rapidly permeable.	Medium infiltration; low water-holding capacity.	Structures not recommended.	Waterways not recommended.	Shallow, or AC, soils; highly erodible.
Fairly impervious.	Moderate strength and stability.	Rapidly permeable.	Medium infiltration; low water-holding capacity.	Structures not recommended.	Waterways not recommended.	Shallow and stony soils.
Excess seepage	Adequate strength and stability.	Moderately permeable.	Medium infiltration; high water-holding capacity.	Easy to build and maintain.	Vegetation needed; shaping may be needed.	

TABLE 5.—*The suitabilities of the soils for earth construction and*

Soil series	Map symbols	Suitability for grading when wet	Suitability of soil for— Septic tanks	Road subgrade [1]	Road fill	Topsoil [2]	Sand and gravel	Siol characteristics affecting— Construction of highways: Road cuts	Drainage
Philo and Stendal	PhA, PlA, PkA	Poor	Poor	Poor to fair.	Fair	Good	Fair to poor.	6 feet + of stratified fine sandy loam, silt loam, and fine sand.	Seasonal high water table; frequently flooded.
Pope	PoA, PpA	Fair	Fair	Fair to poor.	Good	Good	Fair to good.	8 feet + of stratified sandy loam, silt loam, and fine sand.	Seasonal high water table.
Purdy	PuA	Poor	Poor	Poor	Fair	Fair to poor	Poor	5 feet + of stratified silt loam, fine sandy loam, and clay.	Seasonal high water table.
Rarden [4]	RaB2, RaC2, RdB2, RdC2, ReB3, ReC3.	Poor	Poor	Poor	Fair	Poor	Unsuitable	1.5 to 4 feet of plastic clay over shale.	Perched; seasonal high water table.
Robertsville	RoA, RsA	Poor	Poor	Poor	Fair	Poor	Unsuitable	3 to 6 feet of stratified silt loam and clay over limestone.	High water table.
Sequatchie	ScA, ScB, ScB2, SeB2.	Good	Good	Good	Good	Very good in surface layer.	Fair to good	8 feet + of clay loam or fine sandy loam.	Good
Taft	TaA	Poor	Poor	Poor	Fair	Fair in surface soil.	Unsuitable	4 feet + of silt loam and silty clay loam.	Seasonal high water table.
Talladega	TdE	Fair	Poor	Poor to fair.	Fair	Poor	Unsuitable	1 to 2.5 feet of silty clay loam over schist or slate.	Good
Tate	TeB2, TeC2, TgB3, TgC3.	Fair	Fair	Fair to poor.	Good	Good in surface soil.	Unsuitable	2 feet + of gravelly silty clay loam over schist or slate.	Good
Tyler	TyA	Poor	Poor	Fair to poor.	Good	Fair to good in surface soil.	Poor	2 to 8 feet + of fine sandy clay loam.	High water table.

[1] Rating is for disturbed material, and, in places, proper drainage will have to be provided.
[2] Rating is for the A-horizon material for use on embankments, on cut slopes, and in ditches to promote the growth of vegetation.

soil characteristics that affect engineering work—Continued

Soil characteristics affecting—Continued					Waterway problems	Comments
Construction of farm ponds			Irrigation	Use of terraces and diversions		
Impounding area	Embankments	Agricultural drainage				
Fairly impervious.	Low to moderate strength and stability.	Moderately permeable.	Medium infiltration; high water-holding capacity.	Structures not needed.	Waterways not needed.	Seasonal high water table.
Fairly impervious.	Low to moderate strength and stability.	Moderately permeable.	Medium to high infiltration; high water-holding capacity.	Structures not needed.	Waterways not needed.	Seasonal high water table.
Impervious	Low strength and stability.	Slowly permeable	Slow infiltration; low water-holding capacity.	Structures not needed.	Waterways not needed.	Fragipan or claypan at depths of 10 to 18 inches.
Impervious	Moderate strength and stability.	Slowly permeable	Medium infiltration; low water-holding capacity.	Difficult to very difficult to build and maintain.	Thick vegetation needed.	Plastic clay subsoil.
Impervious	Low strength and stability.	Slowly permeable	Slow infiltration; low water-holding capacity.	Structures not needed.	Waterways not needed.	Fragipan or clay layer at depths of 12 to 23 inches.
Excess seepage	Adequate strength and stability.	Moderately permeable.	Medium infiltration; moderate to high water-holding capacity.	Needed on slopes; easy to build and maintain.	Vegetation needed; sloping and shaping may be needed.	
Fairly impervious.	Low strength and stability.	Slowly permeable	Medium infiltration; low water-holding capacity.	Structures not needed.	Waterways not needed.	Fragipan at depths of 15 to 24 inches.
Impervious	Low strength and stability.	Rapidly permeable.	Medium infiltration; low water-holding capacity.	Structures not recommended.	Waterways not recommended.	Shallow, or AC, soils; highly erodible.
Fairly impervious.	Moderate to low strength and stability.	Moderately permeable.	Medium to slow infiltration; moderate water-holding capacity.	Fairly easy to build and maintain.	Vegetation needed; shaping may be needed.	Erodible soil.
Fairly impervious.	Moderate strength and stability.	Slowly permeable	Medium infiltration; low water-holding capacity.	Structures not needed.	Waterways not needed.	Fragipan at depths of 14 to 24 inches.

[3] Clarksville-Fullerton complexes are indicated by map symbols ClC, ClD, and ClF.
[4] Rarden-Montevallo complex is indicated by map symbol RmC2.

Descriptions of the Soils

The soil scientists who made this survey went over the area at appropriate intervals and examined the soils by digging with a spade, auger, or power soil sampler. They examined the different layers, or horizons, in each boring, and they compared the different borings. By such comparisons, they determined the different kinds of soils in the area.

In this section the soils of Calhoun County are described in detail, and their suitability for agriculture is interpreted. A complete profile description of at least one member of each soil series is given. Colors are those for moist soils unless otherwise stated. The symbols in parentheses following the color of the soil refer to Munsell notations of hue, value, and chroma. The approximate acreage of the soils mapped is shown in table 6. The location and distribution of the soils are shown on the detailed soil map in the back of the report. The symbols in parentheses following the name of the soil identify the soil on the detailed map. All of the soils mapped in Calhoun County, their map symbols, and their capability units are given in the Guide to Mapping Units and Capability Units at the end of the report. Many of the terms used in describing the soils are in the Glossary at the end of the report.

TABLE 6.—*Approximate acreage in various land uses and total acreage and proportionate extent of soils*

Soil	Cropland	Woodland	Idle	Pasture	Urban	Total	Proportionate extent
	Acres	*Acres*	*Acres*	*Acres*	*Acres*	*Acres*	*Percent*
Altavista and Masada silt loams, low terraces:							
0 to 2 percent slopes	2,239	255	499	217	18	3,228	0.8
2 to 6 percent slopes, eroded	366	59	36	21	---	482	.1
Anniston gravelly clay loam:							
2 to 6 percent slopes, severely eroded	437	178	181	20	---	816	.2
6 to 10 percent slopes, severely eroded	597	1,687	1,085	166	113	3,648	.9
10 to 15 percent slopes, severely eroded	175	1,817	719	32	138	2,881	.7
15 to 25 percent slopes, severely eroded	7	782	72	6	427	1,294	.3
Anniston and Allen gravelly loams:							
0 to 2 percent slopes	81	46	24	3		154	[1]
2 to 6 percent slopes, eroded	1,726	1,077	1,380	248	1,284	5,715	1.5
6 to 10 percent slopes, eroded	363	1,993	482	28	1,005	3,871	1.0
10 to 15 percent slopes, eroded	83	1,482	189	24	259	2,037	.5
15 to 25 percent slopes, eroded	4	1,214	13	---	---	1,231	.3
Anniston and Allen stony loams:							
0 to 10 percent slopes	91	2,087	313	48	---	2,539	.7
10 to 25 percent slopes	11	4,560	107	2	257	4,937	1.3
Atkins silt loam, 0 to 2 percent slopes	161	2,582	423	322	---	3,488	.9
Atkins and Stendal soils, local alluvium, 0 to 2 percent slopes	723	5,279	1,173	472	4	7,651	2.0
Camp silt loam, 2 to 6 percent slopes	148	59	84	15	---	306	.1
Cane fine sandy loam:							
2 to 6 percent slopes, eroded	293	171	197	49	---	710	.2
6 to 10 percent slopes, eroded	108	346	125	55	55	689	.2
Captina silt loam:							
0 to 6 percent slopes	492	80	146	115	---	833	.2
2 to 6 percent slopes, eroded	655	97	42	110	---	904	.2
Clarksville cherty silt loam:							
2 to 6 percent slopes	121	202	95	7	13	438	.1
6 to 10 percent slopes	1,065	3,937	1,754	74	19	6,849	1.8
10 to 15 percent slopes	355	3,348	1,342	45	10	5,100	1.3
6 to 15 percent slopes, eroded	126	1,177	715	45	334	2,397	.6
15 to 25 percent slopes	42	821	272	16	100	1,251	.3
Clarksville-Fullerton stony loams:							
6 to 10 percent slopes	46	740	83	3	30	902	.2
10 to 15 percent slopes	147	11,379	601	20	13	12,160	3.1
15 to 40 percent slopes	23	45,026	370	17	23	45,459	11.6
Conasauga silt loam, 2 to 6 percent slopes, eroded	76	136	124	---	---	336	.1
Cumberland gravelly loam, 2 to 6 percent slopes, eroded	1,458	344	451	120	117	2,490	.6
Cumberland gravelly clay loam:							
2 to 6 percent slopes, severely eroded	707	119	233	84	---	1,143	.3
6 to 10 percent slopes, severely eroded	380	435	427	193	---	1,435	.4
10 to 25 percent slopes, severely eroded	50	649	267	27	17	1,010	.3
Decatur and Cumberland clay loams:							
2 to 6 percent slopes, severely eroded	4,765	705	600	585	513	7,168	1.8
6 to 10 percent slopes, severely eroded	1,396	2,055	952	510	139	5,052	1.3
10 to 25 percent slopes, severely eroded	121	871	314	124	8	1,438	.4
Decatur and Cumberland loams:							
0 to 2 percent slopes	199	26	71	35	51	382	.1
2 to 6 percent slopes, eroded	2,122	379	366	273	202	3,342	.9
6 to 10 percent slopes, eroded	161	279	118	36	49	643	.2
10 to 25 percent slopes, eroded	13	259	42	10	---	324	.1

See footnote at end of table.

TABLE 6.—*Approximate acreage in various land uses and total acreage and proportionate extent of soils*—Continued

Soil	Cropland	Woodland	Idle	Pasture	Urban	Total	Proportionate extent
Dewey cherty silty clay loam:							
6 to 10 percent slopes, severely eroded	152	837	388	18	28	1, 423	0. 4
10 to 15 percent slopes, severely eroded	78	1, 136	361	74		1, 649	. 4
Dewey silty clay loam:							
2 to 6 percent slopes, severely eroded	1, 390	285	208	171	61	2, 115	. 5
6 to 10 percent slopes, severely eroded	504	625	297	238	60	1, 724	. 4
Dunning silt loam, overwashed, 0 to 2 percent slopes	14	50	17	81		162	(1)
Enders gravelly fine sandy loam:							
2 to 6 percent slopes, eroded	73	55	68	12		208	. 1
6 to 10 percent slopes, eroded	96	155	86	331		368	. 1
10 to 15 percent slopes	8	377	6	2		393	. 1
Etowah silt loam:							
0 to 2 percent slopes	163	13		36		212	. 1
2 to 6 percent slopes, eroded	678	129	85	134	37	1, 063	. 3
Fullerton cherty silt loam:							
2 to 6 percent slopes	481	219	236	33		969	. 2
6 to 10 percent slopes, eroded	1, 232	2, 182	1, 526	140		5, 080	1. 3
10 to 15 percent slopes, eroded	283	2, 265	842	43		3, 433	. 9
15 to 25 percent slopes	84	1, 197	172	22		1, 475	. 4
Fullerton cherty silty clay loam:							
6 to 10 percent slopes, severely eroded	410	640	400	258	145	1, 853	. 5
10 to 15 percent slopes, severely eroded	185	1, 983	965	86	153	3, 372	. 9
15 to 25 percent slopes, severely eroded	57	903	131	16		1, 107	. 3
Georgeville and Tate soils, 2 to 10 percent slopes, eroded	245	215	160	37		657	. 2
Gullied land	47	421	1, 071	5		1, 544	. 4
Holston fine sandy loam:							
2 to 6 percent slopes, eroded	1, 230	96	172	46		1, 544	. 4
6 to 10 percent slopes, eroded	133	186	75	5		399	. 1
Huntington silt loam, local alluvium, 0 to 2 percent slopes	1, 412	199	285	294		2, 190	. 6
Jefferson gravelly fine sandy loam:							
2 to 6 percent slopes, eroded	984	771	533	104	33	2, 425	. 6
6 to 10 percent slopes, eroded	299	569	185	46	40	1, 139	. 3
10 to 15 percent slopes, eroded	27	194	98			319	. 1
Jefferson stony fine sandy loam:							
0 to 10 percent slopes	76	2, 383	432	48		2, 939	. 8
10 to 25 percent slopes	3	631	34	4		672	. 2
Landisburg cherty silt loam:							
2 to 6 percent slopes, eroded	1, 361	651	668	145		2, 825	. 7
6 to 10 percent slopes, eroded	430	438	350	32		1, 250	. 3
Lee silt loam and cherty silt loam, 0 to 2 percent slopes	136	1, 127	261	162	4	1, 690	. 4
Lee silt loam, local alluvium, 0 to 2 percent slopes	56	879	238	47		1, 220	. 3
Lehew-Montevallo soils:							
2 to 10 percent slopes, eroded	370	402	323	94	92	1, 281	. 3
10 to 15 percent slopes, eroded	103	1, 411	344	65	42	1, 965	. 5
15 to 30 percent slopes	33	3, 794	171	66	10	4, 074	1. 0
Lindside silt loam, local alluvium, 0 to 2 percent slopes	1, 076	415	386	316		2, 193	. 6
Lindside and Newark silt loams, 0 to 2 percent slopes	480	591	177	463	277	1, 938	. 5
Linker gravelly fine sandy loam, 6 to 10 percent slopes, eroded	20	92	92	13		217	. 1
Lobelville cherty silt loam, local alluvium, 0 to 2 percent slopes	1, 614	3, 000	1, 876	237	51	6, 778	1. 7
Lobelville silt loam and cherty silt loam, 0 to 2 percent slopes	458	1, 127	368	180		2, 133	. 5
Locust gravelly fine sandy loam:							
0 to 2 percent slopes	239	75	221	56		591	. 2
2 to 6 percent slopes, eroded	1, 105	789	616	226	290	3, 026	. 8
6 to 10 percent slopes, eroded	122	264	120	24		530	. 1
Melvin silt loam, 0 to 2 percent slopes	28	382	64	168		642	. 2
Mine wash	2	87	32	3	10	134	(1)
Minvale cherty silt loam, 2 to 6 percent slopes, eroded	296	118	127	27		568	. 1
Monongahela loam:							
0 to 2 percent slopes	1, 603	322	347	399	159	2, 830	. 7
2 to 6 percent slopes, eroded	1, 367	352	345	145	73	2, 282	. 6
Montevallo shaly silt loam:							
10 to 15 percent slopes	209	8, 611	679	66	30	9, 595	2. 5
15 to 40 percent slopes	48	4, 588	146	13		4, 795	1. 2
Montevallo shaly silty clay loam:							
6 to 10 percent slopes, severely eroded	328	809	573	104	258	2, 072	. 5
10 to 40 percent slopes, severely eroded	275	2, 818	1, 405	145	385	5, 028	1. 3
Muskingum stony fine sandy loam:							
10 to 15 percent slopes	49	946	71	1	14	1, 081	. 3
15 to 25 percent slopes	24	2, 784	79	21		2, 908	. 7

See footnote at end of table.

TABLE 6.—*Approximate acreage in various land uses and total acreage and proportionate extent of soils*—Continued

Soil	Cropland	Woodland	Idle	Pasture	Urban	Total	Proportionate extent
Nolichucky gravelly fine sandy loam:							
2 to 6 percent slopes, eroded	109	47	12	1		169	(1)
6 to 10 percent slopes, eroded	172	158	103	26		459	0. 1
Philo and Stendal fine sandy loams, 0 to 2 percent slopes	1, 194	2, 073	770	671	173	4, 881	1. 3
Philo and Stendal silt loams, 0 to 2 percent slopes	2, 500	4, 391	509	760		8, 160	2. 1
Philo and Stendal soils, local alluvium, 0 to 2 percent slopes	948	803	547	169		2, 467	. 6
Pope fine sandy loam, 0 to 2 percent slopes	605	390	170	103		1, 268	. 3
Pope silt loam, 0 to 2 percent slopes	997	566	98	48		1, 709	. 4
Purdy silt loam, 0 to 2 percent slopes	430	2, 096	581	565		3, 672	. 9
Rarden gravelly loam, shallow:							
2 to 6 percent slopes, eroded	292	411	246	104		1, 053	. 3
6 to 10 percent slopes, eroded	232	2, 333	365	84		3, 014	. 8
Rarden silt loam, shallow:							
2 to 6 percent slopes, eroded	2, 034	1, 804	1, 617	464	130	6, 049	1. 5
6 to 10 percent slopes, eroded	861	2, 815	1, 110	342	41	5, 169	1. 3
Rarden silty clay loam, shallow:							
2 to 6 percent slopes, severely eroded	314	249	269	99	535	1, 466	. 4
6 to 10 percent slopes, severely eroded	796	1, 916	1, 667	339		4, 718	1. 2
Rarden-Montevallo complex, 2 to 10 percent slopes, eroded	849	3, 021	987	185	72	5, 114	1. 3
Robertsville silt loam, 0 to 2 percent slopes	231	695	272	386		1, 584	. 4
Robertsville silt loam, overwashed, 0 to 2 percent slopes	97	17	73	60		247	. 1
Sequatchie fine sandy loam:							
0 to 2 percent slopes	944	187	132	208	41	1, 512	. 4
2 to 6 percent slopes	418	113	45	57		633	. 2
2 to 6 percent slopes, eroded	798	45	75	50		968	. 2
Sequatchie gravelly fine sandy loam, 2 to 6 percent slopes, eroded	416	56	86	107	5	670	. 2
Stony rough land, limestone	2	1, 938	23			1, 963	. 5
Stony rough land, sandstone	4	53, 629	12			53, 645	13. 7
Stony rough land, slate		17, 822	4			17, 826	4. 6
Taft silt loam, 0 to 2 percent slopes	288	67	18	143		516	. 1
Talladega soils, 10 to 40 percent slopes	59	1, 573	224	22		1, 878	. 5
Tate gravelly silt loam:							
2 to 6 percent slopes, eroded	563	489	188	110		1, 350	. 3
6 to 10 percent slopes, eroded	35	81	34	4		154	(1)
Tate gravelly silty clay loam:							
2 to 6 percent slopes, severely eroded	96	16	37	13		162	(1)
6 to 10 percent slopes, severely eroded	68	174	113	12		367	. 1
Terrace escarpments	17	339	91	7		454	. 1
Tyler silt loam, 0 to 2 percent slopes	1, 872	1, 097	758	607	33	4, 367	1. 1
Mines, pits, and dumps (shown by standard symbol)					785	785	. 2
House sites and water areas					1, 138	1, 138	. 3
Totals	62, 550	255, 737	46, 635	15, 125	9, 215	390, 400	99. 8

[1] Area is less than 0.1 percent. Soils in this category total 935 acres or 0.02 percent of county.

Altavista Series

The Altavista series consists of strongly acid, well drained to moderately well drained soils on low stream terraces. These soils are flooded when water is unusually high. They are fairly extensive along Choccolocco Creek. They have developed from old general alluvium that originated mainly from slate and schist; some of the alluvium washed from sandstone and shale. In places not damaged by erosion, the surface soil is a friable, dark-brown silt loam and the subsoil a yellowish-brown silty clay loam.

These soils are commonly associated with the Sequatchie, Monongahela, Tyler, and Purdy soils. They are finer textured and firmer than the Sequatchie. They differ from the Monongahela and Tyler soils in that they are finer textured, browner or redder, and better drained, and they have no fragipan.

The Altavista soils are moderately fertile, and they have a deep root zone. They respond to management and are suited to a fairly wide range of crops. They are easily conserved. About 70 percent of the acreage is cultivated. The natural vegetation is mainly pine, oak, hickory, and gum.

In Calhoun County the Altavista soils are mapped with the Masada soils as undifferentiated units. A typical profile of an Altavista soil is described under the mapping unit Altavista and Masada silt loams, low terraces, 0 to 2 percent slopes.

Altavista and Masada silt loams, low terraces, 0 to 2 percent slopes (AaA).—Areas of this mapping unit consist of one or both of the soils described below.

A profile of Altavista silt loam in a moist, cultivated field in the SW¼SE¼ sec. 17, T. 16 S., R. 9 E., 3 miles west of Old Davisville, is as follows:

A_p 0 to 7 inches, dark-brown (10YR 4/3) silt loam; weak, fine, crumb structure; very friable; fine roots abundant; strongly acid; clear, smooth boundary; layer ranges from 4 to 10 inches in thickness.

B_2 7 to 33 inches, yellowish-brown (10YR 5/6) silty clay loam; weak, fine, subangular blocky structure; friable; feels slick or soapy when rubbed between fingers; contains small fragments of schist and some concretions of manganese; strongly acid; gradual, smooth boundary; layer ranges from 14 to 28 inches in thickness.

B_3 33 to 52 inches, brownish-yellow (10YR 6/6) silty clay loam; common, fine, distinct mottles of strong brown; weak, fine, subangular blocky structure; friable; feels slick or soapy when rubbed between fingers; contains many small fragments of schist and concretions of manganese; strongly acid; gradual, smooth boundary; layer ranges from 4 to 20 inches in thickness.

C 52 inches +, mottled yellowish-brown (10YR 5/6) and strong-brown (7.5YR 5/6) silty clay; weak, fine, subangular blocky structure; friable; contains numerous small fragments of schist and concretions of manganese; slick or soapy when rubbed between fingers.

The surface soil ranges in color from dark brown to very dark grayish brown. Some small areas have rounded quartz gravel, ranging from 1/4 to 2 inches in diameter, on the surface and throughout the solum. In places, the lower part of the subsoil is mottled. The profile ranges from 22 to 58 inches in thickness over the D layer, which is variable in color, texture, and structure. Some areas with a loam or fine sandy loam surface layer are included.

A profile of Masada silt loam in a moist, cultivated field in the SE1/4NW1/4 sec. 2, T. 17 S., R. 8 E., 1.1 miles east of Friendship School, is described as follows:

A_p 0 to 8 inches, dark-brown (10YR 4/3) silt loam; weak, fine, crumb structure; friable; numerous roots; strongly acid; clear, smooth boundary; layer ranges from 4 to 10 inches in thickness.

B_2 8 to 23 inches, yellowish-red (5YR 5/6-4/6) silty clay loam; weak to moderate, medium, subangular blocky structure; friable to firm; feels slick or soapy when rubbed between fingers; some peds have slightly darker colored skins of clay; contains small fragments of schist; strongly acid; gradual, smooth boundary; layer ranges from 14 to 28 inches in thickness.

B_3 23 to 36 inches, strong-brown (7.5YR 5/6) silty clay loam; common, medium, distinct mottles of light brownish gray, yellowish red, and dark brown; weak to moderate, medium, subangular blocky structure; friable; feels slick or soapy when rubbed between fingers; contains many small fragments of schist; strongly acid; gradual, smooth boundary; layer ranges from 10 to 20 inches in thickness.

D 36 to 46 inches +, mottled light yellowish-brown (2.5Y 6/4), yellowish-brown (10YR 5/6), and strong-brown (7.5YR 5/6), light silty clay loam; massive structure; friable; feels slick or soapy when rubbed between fingers; strongly acid.

The surface soil ranges in color from dark brown and dark grayish brown to dark yellowish brown. A few areas are gravelly. In some places the lower part of the subsoil is mottled. The profile ranges in thickness from 28 to 58 inches over the D layer, which is weakly cemented in some places. Some areas with loam and fine sandy loam surface soils are included.

This mapping unit has slow runoff and infiltration. Permeability is moderate, and internal drainage is medium. The capacity for available moisture is moderate. Organic matter and natural fertility are low. Tilth is good. The soils of this mapping unit respond to management and are suitable for many kinds of crops. They have a deep root zone and are well suited to moderately intensive use. There is some risk of flooding.

Most of the acreage has been used, mainly for corn; some has been used for cotton. About 69 percent of the acreage is now cultivated, and the rest is wooded, pastured, or idle. Capability unit IIw-2.

Altavista and Masada silt loams, low terraces, 2 to 6 percent slopes, eroded (AaB2).—The plow layer in this mapping unit is dark-brown to reddish-yellow silt loam, 5 to 6 inches thick. It is underlain by a yellowish-brown or yellowish-red silty clay loam subsoil. In severely eroded places, the plow layer is in the subsoil. These places have more runoff and poorer tilth. A few slopes exceed 6 percent.

This mapping unit has a thick root zone. It responds to management. It is suited to moderately intensive use, but runoff is a hazard. All the acreage has been cultivated, mainly for cotton, corn, and hay. About 75 percent of the acreage is now cultivated; the rest is wooded, pastured, or idle. Capability unit IIe-4.

Allen Series

The Allen series consists of deep, strongly acid, well-drained soils that have developed in old local alluvium. The parent material washed from the adjacent, higher lying Linker, Muskingum, Enders, and Montevallo soils, which developed from weathered sandstone, shale, and quartzite. The surface horizon of the Allen soils is chiefly dark grayish-brown fine sandy loam or loam. The subsoil is dark-red fine sandy clay loam. Fragments of sandstone and quartzite, as much as 8 inches in diameter, are on the surface and throughout the soil.

The Allen soils are associated with the Anniston, Cane, Jefferson, and Locust soils. They differ from the Anniston only in having a lighter colored surface horizon and from the Jefferson in having a red rather than a yellowish-brown subsoil. They differ from the Locust in being deeper, redder, and better drained and from both the Locust and Cane in not having a fragipan. They resemble the Cane soils in color, texture, and structure of the A and upper B horizons.

The Allen soils are on foot slopes and colluvial fans at the bases of the Choccolocco, Coldwater, and Colvin Mountains. The less sloping areas are easily conserved and suited to many kinds of crops; the steeper slopes should be kept permanently in vegetation. Most of the acreage is in crops. The present natural vegetation is mainly pine, oak, and hickory.

In Calhoun County the Allen soils are mapped only with the Anniston as undifferentiated units. A typical profile of an Allen soil is given in the mapping unit Anniston and Allen gravelly loams, 2 to 6 percent slopes, eroded.

Anniston Series

The Anniston series consists of strongly acid, deep, well-drained soils that have developed in old local alluvium. The parent material of the Anniston soils washed from the adjacent, higher lying Linker, Muskingum, Enders, and Montevallo soils. The surface horizon is mainly very dark brown loam, and the subsoil is mainly dark-red sandy clay loam. Sandstone and quartzite gravel and cobbles, as much as 8 inches in diameter, are on the surface and throughout the soil.

Anniston soils are associated with the Allen, Jefferson, Cane, and Locust soils. They differ from the Allen, which are mapped with the Anniston soils as undifferentiated units, in having a darker surface soil. Anniston soils differ from the Jefferson in having a darker surface soil and a redder subsoil. They differ from the Locust soils in being deeper, redder, and better drained, and from both the Locust and Cane soils in having no fragipan. They resemble the Cane soils in color, texture, and structure of the A and upper B horizons.

The Anniston soils are on foot slopes and on colluvial fans at the bases of the Choccolocco, Coldwater, and Colvin Mountains. The less sloping areas are easily conserved and suited to many kinds of crops. The more sloping areas should be kept permanently in vegetation. Most of the acreage is in crops. The present natural vegetation is mainly pine, oak, and hickory.

A typical profile of an Anniston soil is given in the mapping unit Anniston and Allen gravelly loams, 2 to 6 percent slopes, eroded.

Anniston gravelly clay loam, 2 to 6 percent slopes, severely eroded (AbB3).—This soil consists of areas that were formerly Anniston gravelly loam or Allen gravelly loam that have lost nearly all their original surface soil through erosion. The plow layer is now reddish-brown gravelly clay loam, 4 to 6 inches thick. In most places the plow layer is underlain by red or dark reddish-brown gravelly clay loam.

Anniston gravelly clay loam, 2 to 6 percent slopes, severely eroded, contains many small, shallow gullies and a few deep ones. Tilth is poor. Infiltration is moderately slow, and the capacity to hold available moisture is low. These characteristics, as well as the content of gravel, limit the capability of the soil for agriculture.

All the acreage has been cultivated, mainly for cotton and corn. Only about 54 percent of the acreage is now cultivated; the rest is wooded or idle. Capability unit IIIe–1.

Anniston gravelly clay loam, 6 to 10 percent slopes, severely eroded (AbC3).—This soil consists of areas that formerly were Anniston gravelly loam or Allen gravelly loam that have lost nearly all of their original surface soil through erosion. The plow layer is now a reddish-brown gravelly clay loam, 4 to 6 inches thick. It is underlain, in most places, by red or dark reddish-brown gravelly clay loam. This mapping unit has many small, shallow gullies and a few deep ones. Tilth is poor. Infiltration is moderately slow, and the capacity for available moisture is low. All of the acreage has been cultivated, mainly for cotton and corn. Now, 54 percent of the acreage is cropped, pastured, or idle; the rest is wooded. Capability unit IVe–1.

Anniston gravelly clay loam, 10 to 15 percent slopes, severely eroded (AbD3).—This soil consists of areas that were formerly Anniston gravelly loam or Allen gravelly loam that have lost practically all of their original surface soil through erosion. The plow layer is now a reddish-brown gravelly clay loam, 4 to 6 inches thick. In most places, it is underlain by red or dark reddish-brown gravelly clay loam.

Many shallow gullies and a few deep ones are in this mapping unit. The soil has poor tilth. Infiltration is moderately low, and the capacity for supplying available moisture is low. These characteristics, together with strong slopes, limit the capability of the soil for agriculture. As a rule, cultivation is not practical.

All the acreage has been cultivated, mainly for cotton and corn. About 37 percent of the acreage is now cropped, pastured, or idle; the rest is wooded. Capability unit VIe–1.

Anniston gravelly clay loam, 15 to 25 percent slopes, severely eroded (AbE3).—This soil consists of areas that were formerly Anniston gravelly loam or Allen gravelly loam that have lost nearly all of their original surface soil through erosion. The plow layer is now a reddish-brown gravelly clay loam, 4 to 6 inches thick. In most places, it is underlain by a red or dark reddish-brown clay loam.

Gullies are common in this soil. The soil has poor tilth. Infiltration is slow, and the capacity for supplying available moisture is low. These characteristics and strong slopes make this soil unsuited to cultivation.

All of the acreage has been in cultivation, mainly for cotton and corn. Now, about 60 percent is wooded; the rest is idle or in urban developments. Capability unit VIIe–1.

Anniston and Allen gravelly loams, 0 to 2 percent slopes (AcA).—This unit is distinguished from Anniston and Allen gravelly loams, 2 to 6 percent slopes, eroded, by having milder slopes and a thicker surface soil. The surface soil ranges from 6 to 11 inches in thickness. There are practically no severely eroded places where the subsoil is exposed.

This unit has good tilth. It responds to management and is suited to intensive use. The root zone is thick. All of the acreage has been cultivated, mainly for cotton and corn. About 52 percent is now cropped; the rest is wooded, pastured, or idle. Capability unit I–1.

Anniston and Allen gravelly loams, 2 to 6 percent slopes, eroded (AcB2).—This mapping unit consists of friable soils that have developed in old alluvium on foot slopes and fans along the bases of mountains.

A profile of Anniston gravelly loam in a moist, forested site is described as follows:

A_p 0 to 4 inches, dark reddish-brown (5YR 3/3) gravelly loam; dark brown (7.5YR 4/4) when dry; weak, fine, granular and weak, fine to medium, subangular blocky structure; friable; strongly acid; abrupt, wavy boundary; layer ranges from 2 to 6 inches in thickness.

B_1 4 to 9 inches, dark reddish-brown (2.5YR 3/4) gravelly fine sandy clay loam; yellowish red (5YR 4/8) when dry; weak, fine and medium, subangular blocky structure; friable to firm; strongly acid; clear, wavy boundary; layer ranges from 2 to 6 inches in thickness.

B_{21} 9 to 22 inches, dark-red (2.5YR 3/6, moist and dry) clay loam; weak to moderate, medium and coarse, subangular blocky structure; firm; very strongly acid; gradual, smooth boundary; layer ranges from 8 to 16 inches in thickness.

B_{22} 22 to 34 inches, dark-red (2.5YR 3/6, moist and dry) clay loam; moderate, medium, subangular blocky structure; firm; few pebbles and concretions; very strongly acid; gradual, smooth boundary; layer ranges from 10 to 20 inches in thickness.

B_{23} 34 to 70 inches +, dark-red (2.5YR 3/6, moist and dry) clay loam; moderate, medium, subangular blocky structure; friable to firm; few skins of clay on peds; very strongly acid; layer ranges from 4 to 44 inches in thickness.

The color of the surface soil ranges from very dark brown and dark brown to reddish brown and dark reddish brown. The texture of subsoil ranges from light clay loam to clay or silty clay loam. The alluvium ranges in thickness from 2 to more than 8 feet.

Included with this soil are some areas having a fine sandy loam to silt loam surface soil. Also included are some severely eroded places that now have a dark reddish-brown or reddish-brown clay loam or gravelly loam plow layer. There is also a small acreage of uneroded soil in forest. In these uneroded areas, the A_1 layer is generally about 4 inches thick but is as much as 6 inches thick in places. It consists of very dark brown (10YR 2/2, moist) (10YR 4/3, dry) gravelly loam and contains many roots. It has weak, fine, granular structure and is strongly acid. The boundary is clear and smooth. Under this layer is an A_3 layer about 3 inches thick consisting of a dark reddish-brown (5 YR 3/3) or dark-brown (7.5YR 4/4, dry) gravelly loam. It has weak, fine, granular and weak, fine to medium, subangular blocky structure. It is friable and strongly acid. The boundary is abrupt and wavy. This layer ranges from 2 to 6 inches in thickness. Below this is the B_1 layer described in the typical profile.

A profile of Allen gravelly loam in a moist, idle area in the SE¼NE¼ sec. 12, T. 14 S., R. 8 E., 1.5 miles northeast of post office in Jacksonville, Ala., is described as follows:

A_p 0 to 4 inches, dark grayish-brown (10YR 4/2) gravelly loam; pale brown (10YR 6/3) when dry; weak, fine, granular structure; friable; fine roots abundant; strongly acid; clear, wavy boundary; layer ranges from 2 to 8 inches in thickness.

B_1 4 to 9 inches, dark-red (2.5YR 3/6), gravelly fine sandy clay loam; yellowish-red (5YR 5/8) when dry; weak, fine, subangular blocky structure; friable; few fine roots; strongly to very strongly acid; gradual, wavy boundary; layer is 3 to 8 inches thick.

B_2 9 to 40 inches +, dark-red (10R 3/6) gravelly fine sandy clay; red (2.5YR 4/6–4/8) when dry; moderate, medium, subangular blocky structure; friable, but slightly sticky when wet; very strongly acid; layer ranges from 9 to 42 inches in thickness.

The surface soil ranges from very dark grayish brown to dark reddish gray and dark reddish brown. The subsoil ranges from dark red to yellowish red. In places the texture grades to a light silty clay loam. The amount of gravel ranges from a few scattered fragments to very many.

Some areas with a gravelly fine sandy loam surface soil are included. Severely eroded soils of poor tilth occur in a few areas. Here, the plow layer is a reddish-brown to dark reddish-brown gravelly clay loam. Shallow gullies are in many areas.

Infiltration and runoff are medium for this mapping unit. Permeability is moderate, and the capacity for available moisture is high. Fertility and organic matter are moderate to low. The root zone is thick. Except for the severely eroded inclusions, this mapping unit has good tilth and is productive.

This mapping unit is well suited to moderately intensive use. It responds to management, but there is some risk of erosion. Most of the acreage has been used, mainly for cotton and corn. About 30 percent of the acreage is now in crops; the rest is wooded, pastured, or idle. Capability unit IIe-1.

Anniston and Allen gravelly loams, 6 to 10 percent slopes, eroded (AcC2).—This unit is similar to Anniston and Allen gravelly loams, 2 to 6 percent slopes, eroded. However, severely eroded places may be a little more common on the surface, and there are a few shallow gullies in places. The physical properties of this unit make it suitable for cultivation, but erosion is a risk because of the strong slopes. All of this unit has been cultivated, mainly for cotton and corn. Only about 9 percent is now cropped. About half the acreage is wooded; the rest is idle, or in pasture and urban developments. Capability unit IIIe-1.

Anniston and Allen gravelly loams, 10 to 15 percent slopes, eroded (AcD2).—These soils have stronger slopes, a thinner solum, and more rapid runoff than Anniston and Allen gravelly loams, 2 to 6 percent slopes, eroded. Severely eroded benches and shallow gullies are common in many areas. These areas have a reddish-brown to dark reddish-brown gravelly clay loam surface soil. In addition, they have poor tilth and a low capacity for available moisture. Infiltration is slow.

Most field operations are more difficult on this soil than on Anniston and Allen gravelly loams, 2 to 6 percent slopes, eroded. Capability unit IVe-1.

Anniston and Allen gravelly loams, 15 to 25 percent slopes, eroded (AcE2).—These soils have stronger slopes, a thinner solum, and more rapid runoff than Anniston and Allen gravelly loams, 2 to 6 percent slopes, eroded. In slightly eroded places, the surface soil is very dark brown to very dark grayish-brown gravelly loam, 6 to 8 inches thick. In many places, severely eroded patches and shallow gullies are common. Here, the plow layer is reddish-brown to dark reddish-brown gravelly clay loam. In these areas, tilth is poor, infiltration is slow, and the capacity to hold moisture is low.

Physical properties and the risk of erosion make the soils poorly suited to cultivation. All of the acreage has been cultivated, mainly for cotton and corn. About 98 percent is now wooded; the rest is cropped or idle. Capability unit VIe-1.

Anniston and Allen stony loams, 0 to 10 percent slopes (AdC).—These soils differ from Anniston and Allen gravelly loams, 2 to 6 percent slopes, eroded, in having less erosion, a thicker surface layer, and more stones. The surface layer is very dark brown to dark grayish-brown stony loam, 6 to 10 inches thick. Below this is the dark-red or dark reddish brown upper subsoil, or B_1 horizon, of stony fine sandy clay loam.

These soils have poor to fair tilth. They are permeable, have medium infiltration, and have a high capacity for available moisture. Stones interfere greatly with cultivation, mowing, and other fieldwork. Although not well suited to cultivation, the soils are good for pasture and trees. Most of the acreage is woodland; a few small areas are cultivated or used for pasture. Capability unit IVe 4.

Anniston and Allen stony loams, 10 to 25 percent slopes (AdE).—Stronger slopes, less erosion, and numerous stones, 3 to 8 inches in diameter, distinguish this mapping unit from Anniston and Allen gravelly loams, 2 to 6 percent slopes, eroded. The surface soil is very dark brown to very dark grayish-brown stony loam, 4 to 8 inches thick. At a depth of about 10 inches, this ma-

terial grades into the B_1 horizon, which is dark-red or dark reddish-brown, stony fine sandy clay loam. Stones and strong slopes make these soils poorly suited to cultivation. Most of the acreage is woodland. Capability unit VIIe–1.

Atkins Series

The Atkins series consists of poorly drained, strongly acid soils that are developing in general alluvium. This parent material has washed mainly from soils underlain by sandstone and shale. The Atkins soils have a dark grayish-brown, mottled silt loam surface soil. The subsoil is light brownish-gray to light olive-gray, mottled silt loam or clay loam.

The Atkins soils are associated with the Pope, Philo, and Stendal soils. They are more poorly drained and more strongly mottled throughout the profile than the well drained Pope, the moderately well drained Philo, and the somewhat poorly drained Stendal soils.

The Atkins soils occur mainly in small, narrow bands on flood plains along many of the streams in the county. They are flooded part of the time, and they generally vary in texture because they receive new deposits of alluvium. Atkins soils are high in organic matter but low in natural fertility. Yields of crops are low. Most of the acreage has a forest cover of white and water oaks, sweetgum, beech, and poplar.

A typical profile of an Atkins soil is given in the mapping unit Atkins silt loam, 0 to 2 percent slopes.

Atkins silt loam, 0 to 2 percent slopes (AkA).—This poorly drained, friable, low-producing soil is developing in alluvium on first bottoms.

A profile of this soil in a moist, forested site in the NW¼SW¼ sec. 31, T. 13 S., R. 7 E., 1.6 miles northwest of Hebron Church, is described as follows:

A_1 0 to 10 inches, dark grayish-brown (2.5Y 4/2) silt loam; common, fine, distinct mottles of very dark grayish brown; weak, fine, crumb structure; friable; strongly acid; gradual, smooth boundary; layer ranges from 3 to 12 inches in thickness.

C 10 to 28 inches, light brownish-gray (2.5Y 6/2) to light olive-gray (5Y 6/2) silt loam; common, medium, distinct mottles of dark grayish brown; weak, fine, crumb structure; friable; strongly acid; gradual, smooth boundary; layer ranges from 12 to 36 inches in thickness.

D 28 to 48 inches, light brownish-gray (2.5Y 6/2), stratified sand and silt; many, medium, distinct mottles of dark grayish brown; massive structure; friable; strongly acid.

In many areas the surface soil and subsoil are lighter gray and more prominently mottled. The thickness of alluvium ranges from 2 to 6 feet or more. Small areas having better drainage and some areas having a fine sandy loam to loam surface soil and fine sandy loam to clay loam subsoil are included with this soil.

Runoff is very slow, and the soil is flooded after prolonged rainfall or heavy rains of short duration. Infiltration is medium to slow, and permeability is slow. Tilth is generally fair to good. The capacity for available mosture is high, but the range of suitable crops is narrow. Low yields, poor drainage, and overflow make this soil poorly suited to regular cultivation.

About 74 percent of this soil is wooded, mainly with swamp timber of low value; the rest is cropped, pastured, or idle. Capability unit IVw–1.

Atkins and Stendal soils, local alluvium, 0 to 2 percent slopes (AsA).—These undifferentiated soils occur as small areas throughout the shale ridges. They are mainly in the northern part of the county on foot slopes and at the heads of and along small drainageways. The soils vary in color, texture, and consistence. They are flooded part of the time, and seeps are common. The drainage ranges from poor to somewhat poor. The somewhat poorly drained Stendal soils (described in the Stendal series) are darker and less mottled than the poorly drained Atkins. Drainage and wetness limit their use for agriculture. Capability unit IVw–1.

Camp Series

The Camp series consists of well-drained soils that have developed in local alluvium. This parent material washed or sloughed from ridges consisting of interbedded, weak-red sandy shale and fine-grained sandstone. Throughout the profile, the Camp soils are strongly acid, weak-red or purplish silt loam or loam. Fragments of shale from ⅛ to ½ inch in diameter are common on the surface and in the profile.

In many places, Camp soils are adjacent to the Cane and the Locust soils and the Atkins and Stendal soils, local alluvium, 0 to 2 percent slopes. They have less profile development than the Cane and Locust soils and lack the fragipan characteristic of them. Camp soils are better drained than the grayer Atkins and Stendal soils, local alluvium, 0 to 2 percent slopes.

The Camp soils occur on foot slopes and on fans along the foothills of ridges occupied by the Lehew-Montevallo soils in the central part of the county. Areas range from 1 to 5 acres in size. These soils are easily conserved and are suited to many kinds of crops. About half the acreage is cultivated. The natural vegetation is chiefly loblolly and shortleaf pines, oak, hickory, and gum.

Only one soil in the Camp series was mapped in Calhoun County.

Camp silt loam, 2 to 6 percent slopes (CaB).—This is a deep, well-drained, friable, moderately productive soil.

A profile of this soil in a moist, cultivated site in the NW¼NE¼ sec. 3, T. 15 S., R. 8 E., 0.7 mile west of Four Mile Church, is described as follows:

A_p 0 to 6 inches, weak-red (2.5YR 4/2) silt loam; weak, fine, crumb structure; very friable; numerous roots; strongly acid; gradual, smooth boundary; layer ranges from 3 to 9 inches in thickness.

C_1 6 to 40 inches +, weak-red (10R 4/2) silt loam or loam; weak, fine, crumb structure; friable; few fragments of shale ⅛ to ½ inch in diameter; strongly acid; layer ranges from 15 to 60 inches in thickness.

The profile ranges from 18 to 60 inches in thickness. In wooded areas the surface layer is dark reddish brown. In a few small areas, the profile has more development, and, in other small areas, a weak fragipan is at depths of 18 to 20 inches.

Some areas with a loam or shaly loam surface soil are included with this soil.

This soil has good tilth. Runoff and infiltration are medium. Permeability and the capacity for available moisture are moderate. Natural fertility and organic

matter are low. The soil has a deep root zone. It is fairly productive, and it can be used fairly intensively. However, runoff is somewhat of a hazard and may cause erosion unless conservation is practiced. This soil responds well to management, and it is suited to many kinds of crops.

Most of the acreage has been cropped, mainly to cotton and corn. At present, about half the acreage is in crops, and the rest is wooded, pastured, or idle. Capability unit IIe-4.

Cane Series

The Cane series consists of strongly acid to very strongly acid, well drained to moderately well drained soils that have developed in old local alluvium. The parent material washed from ridges of interbedded sandstone, shale, and cherty limestone. The Cane soils occur in small areas on foot slopes and on fans along the lower ridges throughout the county. The surface soil is yellowish-red to dark-brown fine sandy loam, and the subsoil is yellowish-red fine sandy clay loam. In many places, small concretions of iron or manganese are on the surface and throughout the profile.

In most places the Cane soils are associated with the Anniston, Allen, Jefferson, Locust, and Camp soils. The distinct fragipan, thinner solum, and poorer drainage distinguish the Cane soils from the Anniston, Allen, and Jefferson. Cane soils are not so red as the Anniston and Allen soils but redder than the Jefferson and the Locust. They are older, better developed, and at higher elevations than the weak-red Camp soils.

These soils are fairly easily conserved and are suited to a fairly wide range of crops. About 28 percent of the acreage is cultivated. The present natural vegetation is mainly pine, oak, and hickory.

A typical profile of a Cane soil is given in the mapping unit Cane fine sandy loam, 2 to 6 percent slopes, eroded.

Cane fine sandy loam, 2 to 6 percent slopes, eroded (CbB2).—This moderately well drained soil has developed in old local alluvium on foot slopes and on fans along the bases of ridges.

A profile of this soil in a moist, wooded site located in the NW¼SW¼ sec. 22, T. 14 S., R. 8 E., 2 miles southwest of Jacksonville, is described as follows:

A_p 0 to 5 inches, yellowish-red (5YR 4/6) fine sandy loam; weak, fine to medium, granular structure; very friable; first inch stained with organic matter; fine roots abundant; strongly acid; gradual, wavy boundary; layer ranges from 4 to 8 inches in thickness.

B_1 5 to 14 inches, yellowish-red (5YR 4/6) fine sandy clay loam; weak, fine to medium, subangular blocky structure; friable; few small concretions of iron and manganese; strongly acid; diffuse, wavy boundary; layer ranges from 7 to 12 inches in thickness.

B_2 14 to 27 inches, yellowish-red (5YR 4/8), light fine sandy clay or heavy fine sandy clay loam; weak, medium, subangular blocky structure; friable; some small concretions of iron and manganese; strongly to very strongly acid; clear, smooth boundary; layer ranges from 10 to 16 inches in thickness.

B_{3m} 27 to 40 inches +, mottled yellowish-red (5YR 4/8), strong-brown (7.5YR 5/6), pale-brown (10YR 6/3), and dark-red (2.5YR 3/6) fine sandy loam; weak to moderate, medium, subangular blocky structure; compact in place but friable when dug out; numerous soft concretions of iron or manganese; very strongly acid; layer ranges from 1 to 3 feet in thickness.

The surface soil ranges from yellowish red to brown or dark brown in color. The subsoil ranges from yellowish red to red in color and from light fine sandy clay to light silty clay in texture. In uneroded, wooded areas, the surface soil is very dark gray. The alluvium ranges from 33 to 72 inches in thickness. Depth to the fragipan ranges from 21 to 36 inches. A few small areas have fragments of sandstone and quartz, less than 3 inches in diameter, on the surface and throughout the profile. In some areas a few shallow gullies have formed.

Included with this soil are places where the surface soil is gravelly fine sandy loam to loam. Also included are severely eroded places where the plow layer is a yellowish-red fine sandy clay loam.

This soil has medium runoff, infiltration, and internal drainage and slow permeability. The root zone is thick. The capacity for available moisture is moderate. This soil is fairly easily conserved. Tilth is good to very good. Natural fertility and organic matter are medium to low. The soil responds to management and is suited to many kinds of crops. It can be used moderately intensively, but runoff and erosion are hazards.

Nearly all the acreage has been used, mainly for cotton and corn. Now, about 31 percent of the acreage is cultivated; the rest is wooded, pastured, or idle. Capability unit IIe-5.

Cane fine sandy loam, 6 to 10 percent slopes, eroded (CbC2).—This soil has stronger slopes, more runoff, and a thinner solum than Cane fine sandy loam, 2 to 6 percent slopes, eroded. In a few places there are severely eroded patches and shallow gullies. Here, the plow layer is a yellowish-red fine sandy clay loam, tilth is poor, and there is more runoff than elsewhere.

This soil has a thick root zone. It responds to management and can be used fairly intensively. Erosion is a hazard.

Most of the acreage has been used, mainly for cotton, corn, and hay. Now, about half the acreage is cultivated, pastured, and idle; the rest is wooded. Capability unit IIIe-5.

Captina Series

The Captina series consists of strongly to very strongly acid, moderately well drained soils with a fragipan. These soils occur throughout the county in small areas on stream terraces. They have developed in old general alluvium that washed from soils underlain by limestone, cherty limestone, and shale. The surface soil commonly is dark-brown to very dark grayish-brown silt loam, and the subsoil is yellowish-brown to yellowish-red silty clay loam. The fragipan (compact layer) is at depths ranging from 14 to 34 inches.

These soils are associated with the Cumberland, Etowah, Taft, and Robertsville soils. Captina soils are browner, shallower, and more poorly drained than the Cumberland and the Etowah soils, which do not have a fragipan. They are better drained, browner, and less mottled than the Taft and Robertsville soils.

Although the soils are moderately productive of most

locally grown crops, their suitability is somewhat limited by the fragipan. They are fairly easily conserved. The natural vegetation is pine, oak, and hickory.

A typical profile of a Captina soil is described in the mapping unit Captina silt loam, 2 to 6 percent slopes.

Captina silt loam, 0 to 6 percent slopes (CcB).—This soil has a thicker surface soil, a higher rate of infiltration, and slower runoff than Captina silt loam, 2 to 6 percent slopes, eroded.

The soil has good tilth and a thick root zone. It responds to management and can be used moderately intensively. Runoff is a hazard on the more sloping areas.

Most of the acreage has been used, chiefly for cotton and corn. Now, about 60 percent is in row crops; the rest consists of wooded, pastured, and idle areas. Capability unit IIe-5.

Captina silt loam, 2 to 6 percent slopes, eroded (CcB2).—This moderately deep soil is on stream terraces. A fragipan layer interferes with drainage.

A profile description of this soil from a moist, cultivated site located in the SE¼SE¼ sec. 3, T. 15 S., R. 7 E., 1.8 miles south of Alexandria, is as follows:

A_p 0 to 6 inches, dark-brown to very dark grayish-brown (10YR 4/3-3/2) silt loam; weak, fine, crumb structure; friable; small concretions present; strongly acid; abrupt, smooth boundary; layer ranges from 2 to 9 inches in thickness.

B_{21} 6 to 15 inches, yellowish-brown (10YR 5/8) to strong-brown (7.5YR 5/6) silty clay loam; weak, fine, and medium, subangular blocky structure; friable; few small concretions; strongly acid; gradual, diffuse boundary; layer ranges from 8 to 11 inches in thickness.

B_{22} 15 to 21 inches, strong-brown (7.5YR 5/6) silty clay loam; few, medium, faint mottles of pale brown (10YR 6/3) in the lower part; weak, medium, subangular blocky structure; friable; small concretions; strongly acid; gradual, wavy boundary; layer ranges from 4 to 14 inches in thickness.

B_{3m} 21 to 37 inches, strong-brown (7.5YR 5/8), light silty clay loam; common, medium, distinct mottles of light brownish gray and very dark grayish brown; moderate, medium, subangular blocky and platy structure; compact in place but friable when dug out; numerous concretions; strongly acid; gradual, smooth boundary; layer ranges from 4 to 20 inches in thickness.

C 37 to 42 inches, mottled brown, red, and brownish-yellow silt, clay, and sand; stratified; massive; friable; strongly acid.

The subsoil ranges from yellowish brown to yellowish red. The fragipan ranges in thickness from 4 to 20 inches and in compactness from weak to strong.

Included with this soil are severely eroded places in which the plow layer is brown to reddish-brown silty clay loam.

This soil has medium runoff, a moderate capacity for available moisture, and slow permeability. The root zone is fairly thick; natural fertility and the supply of organic matter are low. Except in severely eroded areas, the plow layer has good tilth. The soil responds to management, and it is suited to a fairly wide range of crops. It can be used moderately intensively, but runoff is a hazard.

Most of the acreage has been used, chiefly for cotton and corn. Now, about 73 percent is cropped; the rest consists of wooded, pastured, and idle areas. Capability unit IIe-5.

Clarksville Series

The Clarksville series consists of strongly acid, well-drained soils that have developed in the residuum of cherty limestone. These soils generally occur in large areas on the tops of fairly wide ridges. Two extensive areas of the Clarksville soils are near Williams School.

The surface soil is dark-brown to dark grayish-brown or very dark grayish-brown cherty silt loam or stony loam. The subsoil is yellowish-brown to light yellowish-brown, faintly mottled, cherty silty clay loam, or pale-brown to light yellowish-brown, stony, light silty clay loam. Pieces of chert and limestone, 3 inches to 8 inches or more in diameter, are on the surface and in the profile.

Clarksville soils are associated with the Fullerton, Dewey, and Decatur soils. They have thinner sola, are less red, and normally are more cherty than the associated soils.

Areas on slopes in the range of 2 to 10 percent are fairly easily conserved and suited to a wide range of crops. Those on slopes stronger than 10 percent should be in forests or other permanent vegetation. A large percentage of the acreage is in forest consisting of post, white, and blackjack oaks, hickory, and shortleaf and lobolly pines.

A typical profile of Clarksville cherty silt loam is given in the mapping unit Clarksville cherty silt loam, 6 to 10 percent slopes. That for Clarksville stony loam is given in the mapping unit Clarksville-Fullerton stony loams, 10 to 15 percent slopes.

Clarksville cherty silt loam, 2 to 6 percent slopes (CkB).—This soil has milder slopes, slower runoff, and a thicker solum than Clarksville cherty silt loam, 6 to 10 percent slopes.

Tilth is fairly good. The root zone is thick. The soil responds to management and can be used fairly intensively. Runoff is a hazard.

Most of the acreage has been used, chiefly for cotton and corn. At present, more than 45 percent of the acreage is in forest, and less than 30 percent is in crops. The rest is pastured, idle, and in urban developments. Capability unit IIe-3.

Clarksville cherty silt loam, 6 to 10 percent slopes (CkC).—This well-drained, cherty soil has developed in residuum derived from cherty limestone.

A profile from a moist, idle site located in the NW¼SE¼ sec. 34, T. 12 S., R. 9 E., 1.7 miles east of the Shady Grove Church, is described as follows:

A_p 0 to 5 inches, dark grayish-brown (2.5Y 4/2) to dark-brown (10YR 4/3) cherty silt loam; weak, fine, granular structure; very friable; fine roots abundant; strongly acid; gradual, smooth boundary; layer ranges from 2 to 7 inches in thickness.

B_1 5 to 13 inches, yellowish-brown (10YR 5/4) to light yellowish-brown (10YR 6/4), cherty, light silty clay loam; weak, fine, subangular blocky structure; few clay skins; friable; roots plentiful; strongly acid; gradual, wavy boundary; layer ranges from 4 to 10 inches in thickness.

B_2 13 to 25 inches, yellowish-brown (10YR 5/6) to strong-brown (7.5YR 5/6) cherty silty clay loam; few, medium, faint mottles of pale brown and light brownish gray; weak to moderate, medium, subangular blocky structure; clay skins or films over peds; friable; strongly acid; gradual, wavy boundary; layer ranges from 8 to 12 inches in thickness.

B_3 25 to 30 inches, strong-brown (7.5YR 5/6) cherty silty clay loam; common, distinct, medium mottles of

light brownish gray and light red; weak to moderate, medium, subangular blocky structure; few clay films; friable; strongly acid; abrupt, wavy boundary; layer is 6 to 7 inches thick.

C 30 to 50 inches +, mottled white (5Y 8/2) or light-gray (2.5Y 7/2), strong-brown (7.5YR 5/6), and yellowish-red (5YR 5/6) cherty limestone; clay material between fragments of chert; very firm in place; strongly acid.

The surface soil is darker in wooded areas, and it is lighter in cultivated fields. The size and amount of chert are variable. The subsoil ranges from light olive brown or light yellowish brown to strong brown. Depth to the C horizon ranges from 20 to 36 inches.

Included with this soil are a few small areas almost free of chert. Some severely eroded places are also included. In these the plow layer is a brown to yellowish-brown cherty silty clay loam. There are also a few shallow gullies.

This soil has medium runoff and infiltration. Permeability is rapid, and the capacity for available moisture is moderate to low. The root zone is thick. Because of chert, the soil has only fair tilth. The soil is low in natural fertility and organic matter. It responds to management, especially to fertilization and additions of organic matter. It can be used fairly intensively, and it is suitable for a fairly wide range of crops. Early spring crops or deep-rooted plants are best suited to this soil.

Most of the acreage has been used, chiefly for cotton and corn. Now, only about 15 percent of the acreage is in crops, and about 60 percent is in forest. The rest is pastured, idle, and in urban developments. Capability unit IIIe–3.

Clarksville cherty silt loam, 6 to 15 percent slopes, eroded (CkC2).—This soil differs from Clarksville cherty silt loam, 6 to 10 percent slopes, in having more runoff and a thinner solum. Most of the original surface soil has been lost through erosion. The plow layer is now a brown to yellowish-brown, heavy cherty silt loam, 3 to 6 inches thick. There are some shallow gullies and a few deep ones.

This soil has poor tilth, a thin root zone, and a low capacity for available moisture. It is not suited to cultivation; the hazard of erosion is great.

Most of the acreage has been used, mainly for cotton, corn, and hay. About 52 percent of the acreage is cropped, pastured, and idle. The rest is in forest, a use for which the soil is best suited. Capability unit VIe–1.

Clarksville cherty silt loam, 10 to 15 percent slopes (CkD).—This soil has stronger slopes, more runoff, and a thinner solum than Clarksville cherty silt loam, 6 to 10 percent slopes. It has poor tilth and a low capacity for available moisture. The root zone is thin, and tillage with machinery is difficult. The soil is not suited to regular cultivation, because the hazard of erosion is great.

About 7 percent of the acreage is cultivated. The rest is wooded, idle, pastured, and in urban developments. Most of the acreage is in woodland, a use for which this soil is best suited. Capability unit IVe–2.

Clarksville cherty silt loam, 15 to 25 percent slopes (CkE).—Stronger slopes, more runoff, and a thinner solum distinguish this soil from Clarksville cherty silt loam, 6 to 10 percent slopes. Some of the original surface soil has been lost through erosion. The plow layer is now a brown to yellowish-brown, heavy cherty silt loam. Shallow gullies are common.

The soil has poor tilth, a thin root zone, and a low capacity for available moisture. These characteristics and the hazard of erosion make this soil unsuited to cultivation.

Most of the acreage has been used, mainly for cotton, corn, and hay. About 35 percent is now cropped, pastured, or idle. The rest is in forest, a use for which the soil is best suited. Capability unit VIIe–1.

Clarksville-Fullerton stony loams, 6 to 10 percent slopes (ClC).—These two soils occur in an intricate pattern and could not be mapped separately. They have milder slopes, slower runoff, and a thicker solum than Clarksville-Fullerton stony loams, 10 to 15 percent slopes. In cultivated areas, the A_p horizon is a mixture of the A_1 and A_2 horizons, and the color is brown to dark brown.

In this mapping unit, tilth is poor and the capacity for available moisture is moderate. The soils are not suited to frequent cultivation. If stones are removed from the surface and management is good, the soils will produce moderate yields of hay or forage.

A few of the less stony areas are in crops or pasture; nearly all the acreage is in forest. Capability unit IVe–4.

Clarksville-Fullerton stony loams, 10 to 15 percent slopes (ClD).—The soils in this mapping unit have developed on uplands in the residuum of cherty limestone. Stones, shallowness, and a high erosion hazard make these soils unsuited to row crops.

A profile of Clarksville stony loam in a moist, wooded site located in the SE¼NW¼ sec. 27, T. 13 S., R. 8 E., is described as follows:

A_1 0 to 1 inch, very dark grayish-brown (2.5Y 3/2) stony loam; weak, fine, granular structure; very friable; fine roots abundant; high in organic matter; medium acid; gradual, wavy boundary; layer ranges from 0 to 2 inches in thickness.

A_2 1 to 5 inches, very dark grayish-brown (2.5Y 3/2) stony loam; weak, fine, granular structure; very friable; fine roots abundant; medium to strongly acid; gradual, wavy boundary; layer ranges from 2 to 6 inches in thickness.

A_3 or B_1 5 to 8 inches, light brownish-gray (2.5Y 6/2) to grayish-brown (2.5Y 5/2) stony loam; weak, fine, granular to weak, fine, subangular blocky structure; friable; fine roots plentiful; strongly acid to medium acid; gradual, wavy boundary; layer ranges from 1 to 6 inches in thickness.

B_2 8 to 24 inches, light yellowish-brown (2.5Y 6/4) to pale-brown (10YR 6/3), stony, light silty clay loam; weak, fine to medium, subangular blocky structure; friable; few clay films; medium acid; abrupt, wavy boundary; layer ranges from 12 to 20 inches in thickness.

C 24 inches +, mottled yellowish-brown (10YR 5/4–5/6), very pale brown (10YR 7/3), and strong-brown (7.5YR 5/6), partly weathered chert; firm to very firm in place; layer ranges from 1 foot to more than 50 feet in thickness.

Depth to bedrock or to the C layer ranges from 15 to 34 inches. Veins or layers of hard chert are in the bedrock. In cultivated areas, the A_1 horizon is lacking and the surface is lighter colored.

A profile of Fullerton stony loam in a moist, wooded site located in the NE¼NE¼ sec. 22, T. 13 S., R. 8 E.,

1 mile southeast of Williams School, is described as follows:

A_1 0 to 6 inches, very dark grayish-brown (10YR 3/2) stony loam; weak, fine, granular structure; very friable; fine roots abundant; strongly acid; gradual, wavy boundary; layer ranges from 3 to 8 inches in thickness.

A_2 6 to 8 inches, strong-brown (7.5YR 5/6) stony loam; weak, fine, granular structure; friable; fine roots abundant; strongly acid; gradual, wavy boundary; layer ranges from 3 to 6 inches in thickness.

B_1 8 to 11 inches, red (2.5YR 4/6–5/6), stony silty clay loam; weak, fine, subangular blocky structure; friable; strongly acid; gradual, wavy boundary; layer ranges from 3 to 6 inches in thickness.

B_2 11 to 19 inches, red (2.5YR 4/6), stony silty clay; weak, medium, angular blocky and subangular blocky structure; friable to firm; strongly acid; diffuse, wavy boundary; layer ranges from 7 to 20 inches in thickness.

C 19 to 42 inches +, red (2.5YR 4/6) chert, clay, and silt; moderate, medium, angular blocky or massive structure; firm to very firm in place but friable when dug out; strongly acid.

The surface layer varies in thickness, and in the cultivated areas, it is lighter colored. The color of the subsoil ranges from red to strong brown, and the texture grades to a silty clay loam. The profile ranges from 16 to 40 inches in thickness. Stones vary in size and abundance from place to place.

In this mapping unit, runoff and infiltration are medium. Permeability is rapid, and the capacity for available moisture is moderate. These soils have poor tilth because of the stony surface soils, and they are low in natural fertility. They respond to management, especially to fertilization, and are suited to a fairly wide range of crops. Pasture or meadow should be kept in thick, vigorous sod. The erosion hazard is high.

About 93 percent of the acreage is in forest, the use for which these soils are best suited. Capability unit VIe–2.

Clarksville-Fullerton stony loams, 15 to 40 percent slopes (ClF).—Stronger slopes, more runoff, and a thinner solum distinguish this mapping unit from Clarksville-Fullerton stony loams, 10 to 15 percent slopes. In cultivated areas, the plow layer is a mixture of the A_1 and A_2 horizons, and the color is brown to dark brown.

The soils in this mapping unit have poor tilth. Their capacity for available moisture is low, and they are not suitable for cultivation.

About 99 percent of the acreage is in forest. Capability unit VIIe–1.

Conasauga Series

The Conasauga series consists of moderately well drained soils that have developed in the residuum of interbedded limestone, calcareous shale, and fine-grained sandy shale. The surface soil is strongly acid, dark-brown to pale-brown silt loam. The subsoil is mildly alkaline, yellowish-brown, plastic silty clay.

Conasauga soils are associated with the Rarden and Montevallo soils on uplands. They are not so red or so strongly acid as the Rarden soils. They are deeper, less well drained, and not so strongly acid as the Montevallo soils.

Conasauga soils are among the least extensive in the county; the largest area of them is in the north-central part. They are moderately deep but low in fertility and in organic matter. They are only fairly well suited to cultivation because permeability is slow, tilth fair, and the range of crops narrow. More than half the acreage is in shortleaf and loblolly pines, white, post, and blackjack oaks, and hickory and sweetgum.

A typical profile of a Conasauga soil is described in the mapping unit Conasauga silt loam, 2 to 6 percent slopes, eroded.

Conasauga silt loam, 2 to 6 percent slopes, eroded (CnB2).—This moderately well drained upland soil has a heavy clay subsoil, which retards the movement of air and water and the growth of roots.

A profile from a moist, cultivated site in the SE¼NW¼ sec. 33, T. 12 S., R. 9 E., 0.4 mile northwest of Shady Grove Church, is described as follows:

A_p 0 to 3 inches, dark-brown (10YR 4/3) silty loam; weak, fine, crumb structure; friable; roots abundant; strongly acid; clear, wavy boundary; layer ranges from 2 to 4 inches in thickness.

A_2 3 to 5 inches, pale-brown (10YR 6/3) silt loam; weak, fine, crumb structure; friable; roots abundant; strongly acid; clear, wavy boundary; layer ranges from 0 to 4 inches in thickness.

B_1 5 to 7 inches, yellowish-brown (10YR 5/8) silty clay; common, medium, distinct mottles of yellowish red; moderate, medium, subangular blocky structure; firm to plastic and sticky; few roots; slightly acid; gradual, wavy boundary; layer ranges from 1 to 4 inches in thickness.

B_2 7 to 32 inches, yellowish-brown (10YR 5/6) silty clay; massive or moderate, coarse, subangular and angular blocky structure; very firm to plastic; few roots and clay skins; mildly alkaline; clear, wavy boundary; layer ranges from 17 to 25 inches in thickness.

C 32 to 40 inches, mottled yellowish-brown (10YR 5/6), white (2.5Y 8/2), and light brownish-gray (2.5Y 6/2) silty clay loam; massive; firm; moderately alkaline; gradual, wavy boundary; layer ranges from 6 to 18 inches in thickness.

D_r 40 to 50 inches +, dark-gray to dark-brown calcareous shale and limestone.

The surface soil ranges from dark brown or very dark brown to pale brown in color. The subsoil ranges from yellowish brown and strong brown to light olive brown. In places it is mottled yellowish red, gray, or brown, and the pH grades to strongly acid. The C layer in some locations is acid.

Included with this soil are some areas having a gravelly silt loam to fine sandy loam surface soil. In some severely eroded spots, the plow layer is yellowish-brown or pale-brown silty clay loam. Some areas have a few shallow gullies. Small, scattered areas with slopes of more than 6 percent are also included.

This soil has slow permeability and slow to very slow infiltration. Runoff is medium. The capacity for available moisture is low. Except in severely eroded areas, tilth is fair. The response to management is fair to poor, and the risk of erosion is high. Firm clay in the subsoil limits productivity and the crops that can be grown. As a whole, the soil is only fairly well suited to cultivation.

Most of the acreage has been used, mainly for cotton, corn, and small grains or hay. About 22 percent of the acreage is now in crops; the rest is forested or idle. Capability unit IIIe–6.

Cumberland Series

The Cumberland series consists of deep, well-drained soils on stream terraces. These soils have developed in old general alluvium that washed from soils derived mainly from limestone and cherty limestone and to some extent from shale and sandstone. The alluvium is 2 to 15 feet thick, and it is underlain by shale or limestone. Where not severely eroded, the surface soil is dark reddish-brown gravelly loam, and the subsoil, dark-red silty clay to gravelly silty clay loam. Rounded chert, sandstone, and quartzite gravel, as much as 3 inches in diameter, are on and in the soil. A large acreage of the Cumberland soils contains a noticeable amount of fine sand, especially in the surface soil and upper part of the subsoil.

The Cumberland soils are associated with the Etowah, Captina, Taft, Decatur, and Robertsville soils. They have a redder subsoil than the Etowah soils. They are redder, deeper, and better drained than the Captina, Taft, and Robertsville soils, and they do not have the fragipan of these three.

The Cumberland soils occur as large areas in the Choccolocco Valley and east of Piedmont. They are suited to a wide range of crops. In the less eroded places, fertility and the supply of organic matter are moderate. The capacity for available moisture is high. The natural vegetation is chiefly pine, oak, hickory, and shrubs. About 42 percent of the acreage is in row crops.

A typical profile of a Cumberland soil is given in the mapping unit Cumberland gravelly loam, 2 to 6 percent slopes, eroded.

Cumberland gravelly loam, 2 to 6 percent slopes, eroded (CoB2).—The following describes a profile of this soil in a moist, cultivated site in the SE¼NE¼ sec. 2, T. 14 S., R. 8 E., 2.7 miles north of Jacksonville, Ala.:

A_p 0 to 7 inches, dark reddish-brown (2.5YR 3/4) gravelly loam; weak, fine, crumb structure; friable; fine roots abundant; strongly acid; gradual, smooth boundary; layer ranges from 0 to 8 inches in thickness.

B_1 7 to 16 inches, dusky-red (10R 3/4) gravelly silty clay loam; weak, medium, subangular blocky structure; friable; strongly acid; gradual, smooth boundary; layer ranges from 2 to 12 inches in thickness.

B_2 16 to 40 inches, dark-red (10R 3/6) gravelly silty clay; moderate, medium, subangular blocky structure; friable; hard when dry and sticky when wet; very strongly acid; gradual, smooth boundary; layer ranges from 20 to 48 inches in thickness.

B_3 40 to 50 inches +, dark-red (10R 3/6) silty clay streaked with yellowish brown; moderate, medium, subangular blocky structure; friable to firm; hard when dry and sticky when wet; very strongly acid.

The surface soil ranges from very dark brown to reddish brown. The subsoil ranges from dark red to red in color and from silty clay loam to clay in texture. The thickness of the alluvium ranges from 2 to 15 feet or more. There are some severely eroded areas, and in these the plow layer is reddish-brown gravelly silty clay loam. Some areas are included that have a silt loam to gravelly fine sandy loam surface soil. This soil is underlain in places by beds of gravel or sand.

This soil has moderate natural fertility and a moderate supply of organic matter. Infiltration is medium, permeability moderate, and the capacity for available moisture high. Tilth is good except in severely eroded places. The soil responds to management and is suited to a wide range of crops. It has a thick root zone and is well suited to moderately intensive use. Runoff is medium but is a slight hazard.

Most of the acreage has been used, chiefly for cotton and corn. About 58 percent of the acreage is in cultivation; the rest is in forest or pasture or is idle. Capability unit IIe–1.

Cumberland gravelly clay loam, 2 to 6 percent slopes, severely eroded (CrB3).—Erosion has removed all or nearly all of the original dark reddish-brown gravelly loam surface soil. The 5- to 7-inch plow layer is now a red or reddish-brown gravelly clay loam or gravelly silty clay loam. The subsoil is a dusky-red to dark-red silty clay or gravelly silty clay loam.

This soil has poor tilth, and it forms clods when it dries. Infiltration is slow. Runoff is more rapid than from Cumberland gravelly loam, 2 to 6 percent slopes, eroded. Erosion is a hazard, and a few shallow gullies have formed. The soil is suited to moderately intensive use.

Most of the acreage has been used, chiefly for cotton and corn. About 62 percent of the acreage is in cultivation; the rest is in forests or pasture or is idle. Capability unit IIIe–1.

Cumberland gravelly clay loam, 6 to 10 percent slopes, severely eroded (CrC3).—Finer texture in the plow layer and stronger slopes distinguish this soil from Cumberland gravelly loam, 2 to 6 percent slopes, eroded. The 3- to 5-inch plow layer is red to reddish-brown gravelly clay loam, which is predominantly subsoil material. Below the plow layer is dusky-red to dark-red silty clay or gravelly silty clay loam.

If tilled, this soil puddles easily when wet and breaks into hard clods when it dries. Tilth is poor. The hazard of erosion is great. Shallow gullies are common, and in some places a few deep ones have formed. The capacity for available moisture is low. This soil is only fairly well suited to frequent cultivation.

Most of the acreage has been used, chiefly for cotton and corn. About 26 percent is now in cultivation; the rest is forested, pastured, or idle. Capability unit IIIe–1.

Cumberland gravelly clay loam, 10 to 25 percent slopes, severely eroded (CrD3).—This soil differs from Cumberland gravelly loam, 2 to 6 percent slopes, eroded, in having stronger slopes, a thinner solum, and a finer textured plow layer. The 3- to 5-inch plow layer is red to reddish-brown gravelly clay loam, which is predominantly subsoil material. Below this is dusky-red to dark-red gravelly silty clay loam or silty clay.

Shallow gullies are numerous, and a few deep ones have formed in some places. Tilth in the plow layer is poor. The soil forms clods if cultivated when moisture is unfavorable. The capacity for available moisture is low. Because of the great hazard of erosion, this soil is poorly suited to frequent cultivation.

Much of the acreage has been used, mainly for cotton and corn. About 64 percent of the acreage is now in forest; the rest is in crops, pasture, and idle areas. Capability unit IVe–1.

Decatur Series

The Decatur series consists of strongly acid, well-drained soils that have developed on uplands from limestone residuum and old valley fill of similar origin. The surface soil is dark reddish-brown loam and the subsoil, a dark-red silty clay. The Decatur soils occur in the valleys of Alexandria and Choccolocco Creeks, and in the area east of Piedmont.

In many places the Decatur soils are associated with the Dewey, Fullerton, and Clarksville soils. The Decatur subsoil is darker red and finer textured than that of the Dewey, Fullerton, and Clarksville soils. In addition, it lacks the chert that is characteristic in the Fullerton and the Clarksville soils.

Decatur soils are suited to a wide range of crops, and about 48 percent of the acreage is cultivated. The natural vegetation is mainly pine, oak, and hickory.

In Calhoun County the Decatur soils are mapped with the Cumberland soils as undifferentiated units. The soils of both series are well drained and differ chiefly in that the Decatur soils have developed in limestone residuum on uplands, whereas, the Cumberland soils have developed in old general alluvium (washed from soils underlain by limestone) on stream terraces. Typical profiles for both of these soils are described in the mapping unit Decatur and Cumberland loams, 2 to 6 percent slopes, eroded.

Decatur and Cumberland clay loams, 2 to 6 percent slopes, severely eroded (DcB3).—This mapping unit has slower infiltration, poorer tilth, and more runoff than Decatur and Cumberland loams, 2 to 6 percent slopes, eroded. Erosion has removed all or nearly all of the original dark reddish-brown surface soil. The 4- to 6-inch plow layer is now reddish-brown clay loam. It forms clods if tilled when too wet. Infiltration is slow, and there is risk of erosion. A few shallow gullies have formed.

Most of the acreage has been used, mainly for cotton and corn. About 66 percent of the acreage is now in crops; the rest is forested, pastured, or idle. Capability unit IIIe–1.

Decatur and Cumberland clay loams, 6 to 10 percent slopes, severely eroded (DcC3).—This mapping unit differs from Decatur and Cumberland loams, 2 to 6 percent slopes, eroded, in having more runoff and a reddish-brown clay loam surface soil. Erosion has removed all or nearly all of the original dark reddish-brown silt loam surface soil. The surface soil forms clods on drying. Infiltration is slow, and there is risk of erosion. A few shallow gullies have formed.

Most of the acreage has been used, chiefly for cotton and corn. About 27 percent of the acreage is cultivated; the rest is wooded, pastured, or idle. Capability unit IIIe–1.

Decatur and Cumberland clay loams, 10 to 25 percent slopes, severely eroded (DcD3).—This mapping unit differs from Decatur and Cumberland loams, 2 to 6 percent slopes, eroded, in having stronger slopes, more runoff, a thinner solum, and a clay loam plow layer. Erosion has removed all the original dark reddish-brown silt loam surface soil. There are many shallow gullies and a few deep ones. The reddish-brown clayey plow layer is predominantly subsoil material. This unit has poor tilth because it commonly forms clods when drying. The capacity for available moisture is low to moderate. Infiltration is slow, and there is great risk of erosion. Most of the acreage is too poor to allow frequent cultivation.

Much of the acreage has been used, mainly for cotton, corn, and hay. About 8 percent of the acreage is in crops; the rest is forested, pastured, or idle. Capability unit IVe–1.

Decatur and Cumberland loams, 0 to 2 percent slopes (DdA).—This mapping unit differs from Decatur and Cumberland loams, 2 to 6 percent slopes, eroded, in having milder slopes, slower runoff, and a thicker surface soil. The surface soil is 5 to 10 inches thick, and it is fairly easily tilled. Erosion is not a hazard. These soils have good tilth. They have a thick root zone and respond to management. They can be used intensively.

Most of the acreage has been used, chiefly for cotton, corn, and market vegetables. About 52 percent of the acreage is in crops; the rest is forested, pastured, and idle. Capability unit I–1.

Decatur and Cumberland loams, 2 to 6 percent slopes, eroded (DdB2).—This mapping unit consists of one or both of these deep, well-drained, productive soils.

A profile description of Decatur loam in a moist, wooded site in the NE¼SW¼ sec. 19, T. 13 S., R. 9 E., 1.2 miles north of Merrellton, Ala., is as follows:

A_1 0 to 3 inches, dark reddish-brown (5YR 3/3) loam; weak, fine, crumb structure; loose; first inch stained by organic matter; fine roots abundant; medium acid; gradual, wavy boundary; layer ranges from 0 to 4 inches in thickness.

A_3 3 to 6 inches, dark reddish-brown (2.5YR 3/4) loam or silt loam; weak, fine, crumb structure; very friable; fine roots abundant; medium acid; diffuse, wavy boundary; layer ranges from 3 to 7 inches in thickness.

B_1 6 to 12 inches, dark-red (10R 3/6) silty clay loam; weak, medium, subangular blocky structure; friable; slightly hard when dry and slightly sticky when wet; few concretions of manganese; few fine roots; slightly acid; diffuse, wavy boundary; layer ranges from 4 to 8 inches in thickness.

B_2 12 to 70 inches +, dark-red (10R 3/6) silty clay; moderate, medium, subangular blocky structure; firm; hard when dry, sticky when wet; small concretions of manganese; some fragments of chert or quartz ranging from ¼ to ¾ inch in diameter in lower part; medium to slightly acid; layer ranges from 2 to 8 feet in thickness.

Where cultivated, the surface soil is a mixture of the A_1 and A_3 horizons. The texture of the subsoil ranges from silty clay loam to clay. In the severely eroded areas, the surface layer is a dark reddish-brown silty clay loam. Bedrock is at depths ranging from 3 feet to 20 feet or more. In a few places there are chert fragments, as much as 2 inches in diameter, on the surface and throughout the profile.

A profile of Cumberland loam from a moist, idle site in the SE¼NW¼ sec. 28, T. 16 S., R. 6 E., 0.2 mile north of the Eastaboga, Ala., railroad crossing, is described as follows:

A_p 0 to 7 inches, dark reddish-brown (2.5YR 3/4) loam; weak, fine, crumb structure; friable; fine roots abundant; strongly acid; gradual, smooth boundary; layer ranges from 0 to 8 inches in thickness.

B_1 7 to 12 inches, dark reddish-brown (2.5YR 3/4) silty clay loam; weak to moderate, medium, subangular blocky structure; friable; few fine roots; very strongly acid;

gradual, smooth boundary; layer ranges from 2 to 10 inches in thickness.

B_2 12 to 36 inches, dark-red (10R 3/6) silty clay; moderate, medium, subangular blocky structure; friable; hard when dry and sticky when wet; few concretions of manganese; very strongly acid; gradual, smooth boundary; layer ranges from 24 to 48 inches in thickness.

B_3 36 to 48 inches +, dark-red (10R 3/6) silty clay streaked with yellowish brown; moderate, medium, subangular blocky structure; friable to firm; few pieces of rounded chert, quartz, and sandstone gravel ranging from ⅛ to 1 inch in diameter are in the lower part; gravel increases with depth; very strongly acid.

The subsoil ranges from silty clay loam to clay in texture and from red to dark red in color. The alluvial parent material ranges from 2 to 15 feet or more in thickness. Some areas are included that have a silt loam to gravelly fine sandy loam surface soil. Other areas have rounded gravel ranging from 1 to 3 inches in diameter on the surface and throughout the soil. Some severely eroded patches have a silty clay loam plow layer.

Decatur and Cumberland loams, 2 to 6 percent slopes, eroded, are moderately fertile soils, and they contain a moderate amount of organic matter. Tilth is good, and the root zone is deep. Runoff and infiltration are medium; permeability is moderate. The capacity to hold moisture is high. The soils respond to management, and they are suited to a wide range of crops. Runoff and erosion are hazards, but the soils can be used moderately intensively.

Most of this unit has been used, mainly for cotton and corn. About 63 percent of the acreage is now cultivated; the rest is wooded, pastured, and idle. Capability unit IIe 1.

Decatur and Cumberland loams, 6 to 10 percent slopes, eroded (DdC2).—This unit differs from Decatur and Cumberland loams, 2 to 6 percent slopes, eroded, in having stronger slopes, more runoff, and a greater erosion problem. The surface soil generally is 3 to 6 inches thick. There are severely eroded places, and a few shallow gullies have formed.

Tilth is fairly good, and the root zone is thick. This unit responds to management. It can be used moderately intensively, but slopes cause some risk of runoff and erosion.

Most of this unit has been used, chiefly for cotton, corn, and hay. About 25 percent of the acreage is now cultivated: the rest is wooded, pastured, or idle. Capability unit IIIe-1.

Decatur and Cumberland loams, 10 to 25 percent slopes, eroded (DdD2).—This unit has stronger slopes, more runoff, and a thinner solum than Decatur and Cumberland loams, 2 to 6 percent slopes, eroded. Severely eroded places are more numerous, and a few shallow gullies have formed.

Tilth is poor, and the capacity for available moisture is moderate. This unit is poorly suited to frequent cultivation because of rapid runoff.

Most of the unit has been used, chiefly for cotton, corn, and hay. About 80 percent of the acreage is woodland; the rest is cultivated, pastured, or idle. Capability unit IVe-1.

Dewey Series

The Dewey series consists of deep, strongly acid, well-drained soils that have developed from residuum of limestone or old valley-fill material. These soils are fairly extensive in the vicinities of Iron City and Alexandria. Where severely eroded, they commonly have a dark reddish-brown silty clay loam surface soil and a red to dark-red silty clay loam to light silty clay subsoil. The cherty types have chert fragments, as much as 3 inches in diameter, on the surface and throughout the soil.

In most places the Dewey soils are associated with the Clarksville, Fullerton, Decatur, and Cumberland soils. They are redder and contain less chert than the Clarksville and Fullerton soils. They have a lighter colored surface soil and a more friable and less dark-red subsoil than the Decatur and Cumberland soils.

Dewey soils on slopes of 2 to 10 percent are fairly easily conserved, and they are suited to a wide range of crops. Those on slopes of 10 to 15 percent require permanent vegetation for the control of erosion.

About 41 percent of the acreage is wooded, 30 percent cultivated, and the rest pastured or idle. The present natural vegetation is mainly pine, oak, and hickory.

A typical profile of a Dewey soil is described under Dewey cherty silty clay loam, 6 to 10 percent slopes, severely eroded.

Dewey cherty silty clay loam, 6 to 10 percent slopes, severely eroded (DeC3).—This deep, well-drained, friable soil has developed on uplands.

A profile from a moist, cultivated site in the SW¼NE¼ sec. 31, T. 14 S., R. 7 E., 3.5 miles west of Alexandria, Ala., follows:

A_p 0 to 8 inches, dark reddish-brown (5YR 3/4–3/3) cherty silty clay loam; weak, fine, crumb structure; friable; roots abundant; very strongly acid; clear, wavy boundary; layer ranges from 3 to 9 inches in thickness.

B_1 8 to 12 inches, dark-red (2.5YR 3/6) to red (2.5YR 4/6) silty clay loam; weak, medium, subangular blocky structure; friable; very strongly acid; gradual, wavy boundary; layer ranges from 3 to 7 inches in thickness.

B_2 12 to 36 inches, dark-red (2.5YR 3/6), light silty clay; moderate, medium, subangular blocky structure; friable to firm; a few clay skins, small concretions, and chert fragments; very strongly acid; gradual, smooth boundary; layer ranges from 18 to 32 inches in thickness.

C 36 to 42 inches +, mottled red, yellowish-red, and reddish-yellow, cherty, light silty clay loam; weak, medium, subangular blocky structure; firm; very strongly acid; layer ranges from 6 to 30 inches in thickness.

The surface soil ranges in color from dark reddish brown and reddish brown to dark brown. The subsoil ranges in color from dark red to yellowish red. Some areas contain no chert, and others are very cherty. The C horizon is at depths ranging from 24 to 48 inches. Some shallow gullies and a few deep ones have formed. Some areas are included that have a silt loam to fine sandy loam surface soil.

This soil has fair tilth, but it forms clods on drying. Infiltration and internal drainage are medium. Permeability is moderate. The capacity for available moisture is high. Natural fertility and the supply of organic matter are moderate. The root zone is thick. The soil

responds well to management, especially to fertilization, and it is suited to a wide range of crops. It is suited to frequent cultivation, but runoff is a hazard.

Most of the acreage has been used, mainly for cotton and corn. About 58 percent of the acreage is now in forest; the rest is in crops or pasture or is idle. Capability unit IIIe–1.

Dewey cherty silty clay loam, 10 to 15 percent slopes, severely eroded (DeD3).—This soil differs from Dewey cherty silty clay loam, 6 to 10 percent slopes, severely eroded, in having stronger slopes, more rapid runoff, and a thinner solum. In addition, it has poorer tilth, a thinner root zone, and a lower capacity for available moisture. This soil puddles easily when wet, and it forms hard clods if tilled when too dry. It is poorly suited to cultivation. The risk of erosion is great.

Most of the soil has been used chiefly for cotton and corn. About 69 percent of the acreage is now in forest; the rest is in crops or pasture or is idle. Capability unit IVe–1.

Dewey silty clay loam, 2 to 6 percent slopes, severely eroded (DsB3).—Milder slopes, less runoff, a thicker solum, and no chert distinguish this soil from Dewey cherty silty clay loam, 6 to 10 percent slopes, severely eroded. Tilth is fairly good, but the soil forms clods on drying. Infiltration is medium. The soil is suited to moderately intensive use. Erosion is a hazard.

Most of the soil has been used, chiefly for cotton and corn. About 65 percent of the acreage is now cultivated; the rest is forested, pastured, and idle. Capability unit IIIe–1.

Dewey silty clay loam, 6 to 10 percent slopes, severely eroded (DsC3).—This soil differs from Dewey cherty silty clay loam, 6 to 10 percent slopes, severely eroded, in that it has slightly better tilth and no fragments of chert on the surface or in the profile.

This soil has good tilth and a thick root zone. It responds to management, and it is fairly well suited to frequent cultivation. It forms clods on drying. Runoff is a hazard.

Most of the acreage has been used, chiefly for cotton and corn. About 29 percent is now cultivated; the rest is forested, pastured, and idle. Capability unit IIIe–1.

Dunning Series

The Dunning series consists of poorly drained, medium to strongly acid soils. These soils have developed in general alluvium that washed mainly from limestone, chert, and shale. They occur as small areas along some of the small streams in the central and north-central parts of the county. The surface soil commonly is mottled, dark reddish-gray silt loam, and the subsoil is dark grayish-brown to very dark grayish-brown, mottled silty clay.

In many places the Dunning soils are associated with the Lindside, Newark, Melvin, Lobelville, and Lee soils. They are more mottled and more poorly drained than the Lindside and the Newark, and they are darker colored and finer textured than the Melvin. The Dunning soils are more mottled, more poorly drained, and less cherty than the Lobelville. They are darker colored and less cherty than the Lee soils.

These soils are the least extensive first-bottom soils in the county. The present natural vegetation is chiefly ash, willow, gum, and water oak.

A typical profile of a Dunning soil is described under Dunning silt loam, overwashed, 0 to 2 percent slopes—the only soil in this series in Calhoun County.

Dunning silt loam, overwashed, 0 to 2 percent slopes (DuA).—This is a poorly drained, low-yielding soil.

A profile from a moist, cultivated site in the SW¼SE¼ sec. 33, T. 14 S., R. 7 E., 1.5 miles west of Alexandria, is described as follows:

A_p 0 to 7 inches, dark reddish-gray (5YR 4/2) silt loam; few, faint, fine mottles of dark brown; weak, fine, crumb structure; friable; fine roots abundant; strongly acid; gradual, smooth boundary; layer ranges from 0 to 12 inches in thickness.

C_1 7 to 12 inches, dark grayish-brown (10YR 4/2) silt loam; common, faint, fine mottles of very dark brown and light brownish gray; weak, fine, crumb structure; friable to firm; strongly acid; gradual, smooth boundary; layer ranges from 3 to 9 inches in thickness.

C_2 12 to 50 inches +, dark grayish-brown (2.5Y 4/2) to very dark grayish-brown (2.5Y 3/2) silty clay; common, fine, distinct mottles of light brownish gray, dark brown, and yellowish brown; massive; plastic when moist, cracks and becomes hard on drying; medium acid; layer ranges from 2 to 5 feet or more in thickness.

The surface soil ranges from dark reddish gray to grayish brown. The subsoil ranges from very dark grayish brown to light gray in color and from clay and silty clay to heavy silt loam in texture. Mottles vary in abundance, intensity, size, and color. Bedrock is at depths ranging from 2¼ to 6 feet or more. Some areas with a light silty clay loam surface soil are included.

This soil has slow runoff, internal drainage, permeability, and infiltration. Tilth is poor. The capacity for available moisture is low. Natural fertility and the content of organic matter are low to moderate. The response to management is poor, and the range of suitable crops is narrow. The soil is poorly suited to intensive use.

Most of the soil has been used, chiefly for corn and sorghum. About 50 percent of the acreage is now in pasture, and less than 9 percent is in cultivation. The rest is in forest and idle areas. Capability unit IVw–1.

Enders Series

The Enders series consists of well-drained, very strongly acid to strongly acid soils. These soils have developed from the residuum of sandstone and shale. They occur in fairly small areas on high ridges underlain mainly by Montevallo shale and sandstone. Where not eroded, the surface soil is dark grayish-brown to brown fine sandy loam, and the subsoil is yellowish-red to strong-brown silty clay loam. Sandstone gravel that is as much as 3 inches in diameter is commonly on and in the soil.

In most places the Enders soils are associated with the Rarden and Montevallo soils. They are deeper and more productive than the Rarden soils, but they have a subsoil that is somewhat similar in color and texture. The Enders soils are deeper and redder than the Montevallo soils. They have developed B horizons, which are absent in the Montevallo soils.

Areas with slopes ranging from 2 to 10 percent are fairly easily conserved, and they are suited to a wide range of crops. Those having slopes ranging from 10 to 15 percent require permanent vegetation for erosion control. About 60 percent of the acreage is in forest, mainly blackjack, post, and white oaks and hickory and pine.

A typical profile of an Enders soil is described under Enders gravelly fine sandy loam, 2 to 6 percent slopes, eroded.

Enders gravelly fine sandy loam, 2 to 6 percent slopes, eroded (EnB2).—This deep, well-drained soil is on uplands.

A profile taken from a moist, wooded site in the SW¼SW¼ sec. 24, T. 14 S., R. 7 E., 0.2 mile north of Brutonville School, is described as follows:

A_1 0 to 2 inches, dark grayish-brown (2.5Y 4/2) to grayish-brown (2.5Y 5/2) gravelly fine sandy loam; weak, fine, granular structure; very friable; numerous sandstone pebbles ranging from ⅛ to ¼ inch in diameter; first inch stained by organic matter; very strongly acid; gradual, smooth boundary; layer ranges from 0 to 3 inches in thickness.

A_2 2 to 7 inches, brown (10YR 5/3) gravelly fine sandy loam; weak, fine, granular structure; very friable; numerous sandstone pebbles from ⅛ to ¼ inch in diameter; very strongly acid; gradual, smooth boundary; layer ranges from 4 to 6 inches in thickness.

A_3 7 to 14 inches, yellowish-brown (10YR 5/4) fine sandy loam; weak, fine, granular structure; friable; numerous sandstone pebbles ⅛ to ¼ inch in diameter; very strongly acid; gradual, wavy boundary; layer ranges from 2 to 8 inches in thickness.

B_1 14 to 17 inches, strong-brown (7.5YR 5/8), heavy very fine sandy loam or light very fine sandy clay loam; weak, fine, granular and weak, fine, subangular blocky structure; friable; very strongly acid; gradual, wavy boundary; layer ranges from 2 to 6 inches in thickness.

B_2 17 to 26 inches, yellowish-red (5YR 4/6–4/8) silty clay loam; weak to moderate, fine and medium, subangular blocky structure; friable; very strongly acid; gradual, wavy boundary; layer ranges from 6 to 12 inches in thickness.

B_3C 26 to 42 inches, yellowish-red (5YR 4/6) silty clay; moderate to strong, medium, subangular blocky structure; firm; some partly weathered sandstone fragments; very strongly acid; gradual, wavy boundary; layer ranges from 8 to 20 inches in thickness.

C 42 to 81 inches, dark-red (2.5YR 3/6) silty clay or clay with common, medium, distinct mottles of strong brown and yellowish brown; massive; firm; very strongly acid.

The surface soil ranges from dark brown to dark grayish brown in color. The subsoil ranges from yellowish red or red to strong brown in color and from silty clay loam to fine sandy clay loam in texture. Bedrock is at depths ranging from 22 inches to 6 feet or more. In cultivated areas having moderate erosion, the surface layer is a mixture of the A_1 and A_2 horizons. Here the surface soil is generally thinner and light brownish gray to pale brown.

Some areas having fine sandy loam to loam surface soils are included. There are also included some severely eroded places in which the plow layer is a yellowish-brown to strong-brown silty clay loam.

This soil has medium runoff. Infiltration is medium to rapid, and permeability is moderate. The capacity for available moisture is moderate. Tilth is good. This soil has a thick root zone, but it is low in fertility and organic matter. It responds to management and is well suited to a wide range of row crops. The soil can be used moderately intensively, but runoff is a hazard.

Most of the soil has been used, mainly for cotton and corn. About 35 percent of the acreage is now in crops; the rest is forested, pastured, and idle. Capability unit IIe-4.

Enders gravelly fine sandy loam, 6 to 10 percent slopes, eroded (EnC2).—This soil has stronger slopes and more runoff than Enders gravelly fine sandy loam, 2 to 6 percent slopes, eroded. Severe erosion occurs in a few places. Here, the plow layer is a yellowish-brown to strong-brown silty clay loam, tilth is poor, and a few shallow gullies have formed.

This soil generally has fairly good tilth and a thick root zone. It responds to management and is suited to moderately intensive use, but erosion is a hazard.

Most of the soil has been used, chiefly for cotton and corn. About 42 percent of the acreage is now in forest; the rest is cropped, pastured, and idle. Capability unit IIIe-4.

Enders gravelly fine sandy loam, 10 to 15 percent slopes (EnD).—This soil has stronger slopes, more runoff, and a thicker surface soil than Enders gravelly fine sandy loam, 2 to 6 percent slopes, eroded. A few eroded places are included. Here, the surface soil is light brownish gray to pale brown and a few shallow gullies have formed.

Tilth is unfavorable for use of farm machinery. The great risk of erosion makes this soil poorly suited to frequent cultivation. The soil is now mostly in woodland, a use for which it is best suited. The remaining small acreage is cropped, pastured, and idle. Capability unit IVe-2.

Etowah Series

The Etowah series consists of well-drained, medium to strongly acid soils on stream terraces. These soils occur as small areas along many of the creeks and large streams in the county. They have developed in old general alluvium that washed from soils underlain by limestone, cherty limestone, and shale. Where uneroded, the surface soil is dark-brown to dark reddish-brown silt loam, and the subsoil is dark reddish-brown to yellowish-red silty clay loam.

The Etowah soils are associated with the Cumberland, Captina, Taft, and Robertsville soils on level and gently sloping stream terraces. The Etowah soils are less red than the Cumberland soils. They are redder, deeper, and better drained than the moderately well drained Captina, the somewhat poorly drained Taft, and the poorly drained Robertsville soils. They also lack the fragipan characteristic of these soils.

Etowah soils are easily conserved, and they are suited to a wide range of crops. The present natural vegetation is mainly pine, oak, and hickory. About 65 percent of the acreage is in row crops.

A typical profile of Etowah soil is described under Etowah silt loam, 0 to 2 percent slopes.

Etowah silt loam, 0 to 2 percent slopes (EtA).—This soil is on level stream terraces. It has good tilth and responds to management. The low risk of erosion makes this soil well suited to row crops.

A profile from a moist, cultivated site in the NE¼NE¼ sec. 29, T. 14 S., R. 7 E., 2.6 miles west of Alexandria, Ala., is described as follows:

A_p 0 to 8 inches, dark-brown (7.5YR 3/2) to dark reddish-brown (5YR 3/2) silt loam; weak, fine, crumb structure; friable; fine roots abundant; slightly acid; clear, smooth boundary; layer ranges from 0 to 10 inches in thickness.

B_1 8 to 12 inches, reddish-brown to dark reddish-brown (5YR 4/4 to 3/4), light silty clay loam; weak, fine, crumb and weak, fine, subangular blocky structure; friable; strongly acid; gradual, wavy boundary; layer ranges from 2 to 8 inches in thickness.

B_2 12 to 36 inches, reddish-brown to yellowish-red (5YR 4/4–4/6) silty clay loam; weak, fine and medium, subangular blocky structure; friable; strongly acid; gradual, wavy boundary; layer ranges from 16 to 48 inches in thickness.

B_3 36 to 46 inches, yellowish-red (5YR 4/8), light silty clay; weak, fine to medium, subangular blocky structure; friable; strongly acid; gradual, wavy boundary; layer ranges from 8 to 14 inches in thickness.

D 46 inches +, mottled yellowish-red and strong-brown clay and sand; massive; friable; strongly acid.

The surface soil in some areas is very dark brown. The subsoil is darker red and heavier textured where this soil grades to the Cumberland soils. The old alluvium is at depths ranging from 2 to 6 or 7 feet. A few small areas have gravel and small concretions on the surface and through the profile. Some areas having a loam and fine sandy loam surface soil are included.

This soil has slow to medium runoff, moderate permeability, and medium infiltration. The capacity for available moisture is moderate to high. Tilth is good. The root zone is thick, and natural fertility is moderate. The soil responds to management and is suited to a wide range of crops. It is fairly well supplied with organic matter and it can be used intensively.

Most of the soil has been used, mainly for cotton and corn. About 76 percent of the acreage is now in crops; the rest is in forest and pasture. Capability unit I–1.

Etowah silt loam, 2 to 6 percent slopes, eroded (EtB2).—This soil has stronger slopes, more runoff, and a thinner surface soil than Etowah silt loam, 0 to 2 percent slopes. In a few areas severe erosion has occurred and the surface layer is reddish-brown to dark reddish-brown silty clay loam with fair tilth. In places a few shallow gullies have formed.

Most areas of this soil have good tilth. The soil responds to management, and it can be used moderately intensively. Runoff is a hazard. The root zone is thick.

About 63 percent of the acreage is in crops; the rest is pastured, forested, and idle. Capability unit IIe–1.

Fullerton Series

The Fullerton series consists of strongly acid, well-drained soils that have developed from the residuum of cherty limestone. These soils occur on wide ridges with sloping to gently sloping tops and strongly sloping to moderately steep sides.

The color of the surface soil ranges from yellowish brown to light brownish gray, or from strong brown to very dark grayish brown. The texture ranges from cherty silt loam to stony loam. The subsoil ranges from red to yellowish-red cherty silty clay loam to silty clay or stony silty clay. Fragments of chert, as much as 3 inches in diameter, are normally on the surface and throughout the soils.

Fullerton soils are associated with the Dewey, Decatur, and Clarksville soils. They are lighter colored and generally more cherty than the Dewey and the Decatur soils. They have a thicker solum and a redder subsoil and generally contain less chert than the Clarksville soils.

The present natural vegetation is mainly blackjack, post, and white oaks, hickory, and shortleaf and loblolly pines. The gently sloping to sloping areas are fairly easily conserved and suited to a wide range of crops. The steeper slopes should be in permanent vegetation to control erosion.

The strong-brown and very dark grayish-brown Fullerton stony loams are mapped with Clarksville soils as a complex (Clarksville-Fullerton stony loams).

A typical profile of a Fullerton soil is given in the mapping unit Fullerton cherty silt loam, 6 to 10 percent slopes, eroded.

Fullerton cherty silt loam, 2 to 6 percent slopes (FcB).—This soil has milder slopes, slower runoff, and a thicker surface soil than Fullerton cherty silt loam, 6 to 10 percent slopes, eroded—the soil for which the typical profile is described.

Tilth is fairly good, and the root zone is thick. The soil responds to management and is suited to moderately intensive use. Erosion, however, is a hazard.

Most of the acreage has been used, mainly for cotton and corn. About 50 percent of the acreage is now in crops; the rest is forested, pastured, and idle. Capability unit IIe–3.

Fullerton cherty silt loam, 6 to 10 percent slopes, eroded (FcC2).—This deep, well-drained, cherty soil is on uplands.

A profile from a moist, cultivated site in the NE¼NW¼ sec. 9, T. 16 S., R. 7 E., 0.3 mile southeast of New Mount Liberty Church, is described as follows:

A_p 0 to 7 inches, yellowish-brown (10YR 5/4) cherty silt loam; weak, fine, granular structure; friable; fine roots abundant; strongly acid; gradual, wavy boundary; layer ranges from 0 to 10 inches in thickness.

B_1 7 to 14 inches, strong-brown (7.5YR 5/8) cherty silty clay loam; weak, fine, subangular blocky structure; friable; fine roots plentiful; strongly acid; diffuse, wavy boundary; layer ranges from 2 to 8 inches in thickness.

B_2 14 to 34 inches, yellowish-red (5YR 4/6) to red (2.5YR 5/6) cherty silty clay loam; moderate, medium, angular and subangular blocky structure; firm; strongly acid; gradual, wavy boundary; layer ranges from 12 to 24 inches in thickness.

B_3 34 to 40 inches, yellowish-red (5YR 4/8), cherty, light silty clay loam; common, medium, distinct mottles of yellow, reddish yellow, and brownish yellow; weak to moderate, medium, subangular and angular blocky structure; firm to very firm; strongly acid; gradual, wavy boundary; layer ranges from 4 to 8 inches in thickness.

C 40 to 50 inches +, mottled yellowish-red (5YR 4/8), strong-brown (7.5YR 5/6), and pale-brown (10YR 6/3) to light-gray (10YR 7/2) chert, silt, and clay; massive; very firm; strongly acid.

The surface soil in uneroded wooded areas is thicker than described and is very dark grayish brown. In cultivated areas the surface soil ranges from yellowish brown

to light brownish gray. The subsoil ranges from red to yellowish red in color and from cherty silty clay loam to clay in texture. The thickness of the solum ranges from 18 to 50 inches.

Included with this soil are some severely eroded places in which the plow layer is a strong-brown to yellowish-red cherty silty clay loam. A few shallow gullies have formed in these areas. Also included are some areas in which the surface soil is silt loam to cherty fine sandy loam.

This soil has medium runoff and infiltration. Permeability and the capacity for available moisture are moderate. Tilth is only fair to good because of chert. The root zone is thick. Natural fertility and the supply of organic matter are low. The soil responds to management, especially to fertilization, and it is suited to a wide range of crops. It can be used moderately intensively. Erosion is a moderate hazard.

Most of the acreage has been used, chiefly for cotton and corn. About 24 percent of the acreage is now cropped; the rest is wooded, pastured, and idle. Capability unit IIIe–3.

Fullerton cherty silt loam, 10 to 15 percent slopes, eroded (FcD2).—This soil differs from Fullerton cherty silt loam, 6 to 10 percent slopes, eroded, in having stronger slopes, more runoff, and a thinner solum.

A few deep gullies and many shallow ones have formed. Tilth is poor. The capacity for available moisture is low. The soil is difficult to farm with machinery, and it is not suited to frequent cultivation. Erosion is a great hazard.

Most of the acreage has been used, mainly for cotton and corn. About 66 percent of the acreage is now in forest and only 8 percent in cultivation. The rest is pastured and idle. Capability unit IVe–2.

Fullerton cherty silt loam, 15 to 25 percent slopes (FcE).—This soil differs from Fullerton cherty silt loam, 6 to 10 percent slopes, eroded, in having a darker brown, thicker surface soil and stronger slopes, more runoff, and a thinner solum. The soil is only slightly eroded. However, where it has been cleared, erosion is moderate and shallow gullies are common.

Tilth is poor; the capacity for available moisture is low. The soil is not suitable for row crops. The erosion hazard is high.

About 81 percent of the acreage is in forest; the rest is cultivated, pastured, and idle. Capability unit VIe–1.

Fullerton cherty silty clay loam, 6 to 10 percent slopes, severely eroded (FlC3).—This soil differs from Fullerton cherty silt loam, 6 to 10 percent slopes, eroded, in that it has a finer textured surface soil. Surface runoff is more rapid. Erosion has removed all or nearly all of the original yellowish-brown cherty silt loam surface soil. The 3- to 6-inch plow layer is now a strong-brown to yellowish-red cherty silty clay loam. A few shallow gullies have formed.

Tilth is poor, and the soil bakes or clods on drying. Infiltration is slow. The soil can be used moderately intensively, but erosion is a hazard.

Most of the acreage has been used, mainly for cotton and corn. About 22 percent of the acreage is now in cultivation; the rest is forested, pastured, and idle. Capability unit IVe–2.

Fullerton cherty silty clay loam, 10 to 15 percent slopes, severely eroded (FlD3). This soil has stronger slopes, a finer textured surface layer, more runoff, and a thinner solum than Fullerton cherty silt loam, 6 to 10 percent slopes, eroded. Erosion has removed all of the original yellowish-brown cherty silt loam surface soil. The surface layer is now a strong-brown to yellowish-red cherty silty clay loam. Shallow gullies are common, and in some places a few deep ones have formed.

Tilth is poor. The soil bakes easily and forms clods if tilled when too wet. The capacity for available moisture is low. Erosion is a serious hazard. The soil is not suitable for cultivation.

Most of the acreage has been used, mainly for cotton, corn, and hay. About 5 percent of the acreage is now in cultivation; most of the rest is forested and idle. Capability unit VIe–1.

Fullerton cherty silty clay loam, 15 to 25 percent slopes, severely eroded (FlE3). This soil has stronger slopes, a finer textured surface layer, more runoff, and a thinner solum than Fullerton cherty silt loam, 6 to 10 percent slopes, eroded. Erosion has removed all of the original yellowish-brown cherty silt loam surface soil. In cultivated areas the surface layer is now a strong-brown to yellowish-red cherty silty clay loam. Many shallow gullies and a few deep ones have formed.

Tilth is poor. The soil bakes easily, and it breaks into clods if tilled when too wet. The capacity for available moisture is low. Erosion is a great hazard. The soil is not suited to cultivation.

Most of the acreage has been used, chiefly for cotton and corn. About 5 percent of the acreage is now in crops; most of the rest is wooded and idle. Capability unit VIIe–1.

Georgeville Series

The Georgeville series consists of strongly acid to very strongly acid, well-drained soils that have developed from the residuum of Talladega slate or of mica schist and phyllite. These soils occur in the eastern part of the county on the foothills of Talladega Mountain.

The surface soil is dark-brown gravelly silt loam, and the subsoil is red silty clay loam.

Georgeville soils are associated with the Tate and the Talladega soils and with Stony rough land, slate. They are redder and deeper and have a better developed profile than the Talladega soils or Stony rough land, slate.

The present natural vegetation is mainly shortleaf and loblolly pines and oak and hickory. About 60 percent of the acreage is in cultivated areas and idle areas. Runoff and erosion should be controlled by suitable conservation practices.

The Georgeville soils are mapped with the Tate soils as undifferentiated mapping units. A typical profile of a Georgeville soil is given in the mapping unit Georgeville and Tate soils, 2 to 10 percent slopes, eroded.

Georgeville and Tate soils, 2 to 10 percent slopes, eroded (GeC2).—This mapping unit consists of one or both of these well-drained, friable soils. It occurs in small areas in the foothills of Talladega Mountain.

A profile of Georgeville gravelly silt loam in a moist, idle site in the SE¼SE¼ sec. 16, T. 16 S., R. 9 E., 2.5

miles west of Old Davis Town and 300 yards south of U.S. Highway No. 78, is described as follows:

A_p 0 to 5 inches, dark-brown (7.5YR 4/4) gravelly silt loam; weak, fine, granular or crumb structure; friable; roots abundant; very strongly acid; clear, smooth boundary; layer ranges from 2 to 8 inches in thickness.

B_2 5 to 24 inches, red (2.5YR 4/8) silty clay loam; weak to moderate, medium, subangular blocky structure; friable; few fine roots; very strongly acid; gradual, wavy boundary; layer ranges from 12 to 26 inches in thickness.

C 24 to 32 inches, red (2.5YR 4/8–5/8) silty clay loam; weak, fine, subangular blocky structure; friable; very strongly acid; diffuse, wavy boundary; layer ranges from 6 to 8 inches in thickness.

D_r 32 inches +, yellowish-red grading to dark-gray Talladega slate or phyllite; very strongly acid.

The surface soil ranges from brown and dark-brown to dark grayish-brown gravelly silt loam to gravelly fine sandy loam. The subsoil ranges from red to yellowish-brown clay loam to silty clay loam. Some severely eroded places are in this mapping unit. In these the plow layer is a reddish-brown to yellowish-red gravelly silty clay loam. Some shallow gullies have formed.

This mapping unit has good tilth. Runoff and internal drainage are medium. Infiltration is medium to slow. Permeability and the capacity for available moisture are moderate. The soils are low in natural fertility and in supplies of organic matter. They respond to management, except where severely eroded, and they are suited to a wide range of crops. They can be used moderately intensively. Runoff and erosion are hazards.

Most of the acreage has been used, chiefly for cotton and corn. About 38 percent of the acreage is now in cultivation. The rest is forested, pastured, and idle. Capability unit IIIe-4.

Gullied Land

Gullied land (Gl).—About 75 percent of the area of this miscellaneous land type consists of gullies, most of which cannot be crossed with tillage implements. Erosion has removed all of the original surface soil and most of the subsoil. The deep gullies have eroded into the compact lower subsoil or parent material. In places, an intricate network of deep gullies has completely destroyed the soil profile.

This land type occurs in small areas scattered throughout the county. These areas were mainly Decatur, Cumberland, Dewey, Fullerton, and Clarksville soils before they were gullied.

Tilth is poor, runoff is rapid, and infiltration is slow. The capacity to hold moisture is low. Fertility and the supply of organic matter are low. Capability unit VIIe-1.

Holston Series

The Holston series consists of well-drained, strongly acid to very strongly acid soils that occur on the higher lying stream terraces in the southwestern part of the county and in small areas along many of the larger creeks. These soils have developed from alluvium that washed from soils underlain by sandstone, shale, and limestone, but predominantly from sandstone and shale. The surface soil is grayish-brown fine sandy loam, and the subsoil is yellowish-brown fine sandy clay loam.

In most places the Holston soils are associated with the Nolichucky, Sequatchie, Monongahela, Tyler, and Purdy soils. They are yellower than the Sequatchie soils and the deeper and better oxidized Nolichucky soils. They are better drained and have less mottling in the subsoil than the moderately well drained Monongahela, the somewhat poorly drained Tyler, and poorly drained Purdy soils, all of which have fragipans.

These productive soils are fairly easily conserved, and they are suited to a wide range of crops. About 70 percent of the acreage is in cultivation. The present natural vegetation is mainly pine, oak, hickory, and shrubs.

A typical profile of a Holston soil is described in the mapping unit Holston fine sandy loam, 2 to 6 percent slopes, eroded.

Holston fine sandy loam, 2 to 6 percent slopes, eroded (HoB2).—This well-drained, friable soil has developed in old general alluvium on stream terraces.

A profile from a moist, cultivated site in the SE¼NE¼ sec. 22, T. 15 S., R. 5 E., 0.2 mile west of Mount Olive Church, is described as follows:

A_p 0 to 7 inches, grayish-brown (2.5Y 5/2) fine sandy loam; weak, fine, granular structure; very friable; fine roots abundant; strongly acid; clear, wavy boundary; layer ranges from 3 to 9 inches in thickness.

B_1 7 to 10 inches, yellowish-brown (10YR 5/6), light fine sandy clay loam; weak, fine to medium, subangular blocky structure; friable; few fine roots; very strongly acid; gradual, wavy boundary; layer ranges from 2 to 6 inches in thickness.

B_2 10 to 22 inches, yellowish-brown (10YR 5/6–5/8) fine sandy clay loam; weak to moderate, fine and medium, subangular blocky structure; friable; very strongly acid; gradual, wavy boundary; layer ranges from 10 to 14 inches in thickness.

B_3 22 to 40 inches, yellowish-brown (10YR 5/6) fine sandy clay loam; common, medium, distinct mottles of yellowish red and pale brown; weak to moderate, fine and medium, subangular blocky structure; friable; very strongly acid; gradual, wavy boundary; layer ranges from 16 to 20 inches in thickness.

C 40 inches +, mottled yellowish-red, red, strong-brown, yellowish-brown, and gray, stratified fine sandy clay; massive; firm; very strongly acid.

The surface soil ranges from gray and grayish brown to very dark grayish brown. The subsoil ranges from light olive brown to strong brown and has a few, fine, faint to many, medium, prominent mottles in the lower part that are normally strong brown, yellowish red, or red in color. The thickness of the profile ranges from 31 to 49 inches. Included with this soil are small, scattered areas that are less sloping and less eroded and that have a gravelly fine sandy loam to loam surface soil. Also included are a few severely eroded places in which the plow layer is a light yellowish-brown fine sandy clay loam. This soil is underlain in places by beds of gravel or sand.

The tilth of this soil is good except in the severely eroded places. Runoff, internal drainage, and infiltration are medium. Permeability and the capacity for available moisture are moderate. The root zone is thick, but the soil is low in natural fertility. Supplies of organic matter are low. The soil responds to management, especially to fertilization and additions of organic matter, and it is suited to a wide range of crops. It is well suited to moderately intensive use, but runoff is a hazard.

Nearly all the acreage has been used, mainly for cotton and corn. About 79 percent of the acreage is now in cultivation; the rest is forested, pastured, and idle. Capability unit IIe–2.

Holston fine sandy loam, 6 to 10 percent slopes, eroded (HoC2).—Stronger slopes and higher runoff distinguish this soil from Holston fine sandy loam, 2 to 6 percent slopes, eroded. There are a few severely eroded patches in which shallow gullies are common. In these places the plow layer is a light yellowish-brown fine sandy clay loam, and runoff is higher. Included with this mapping unit are a few small areas having stronger slopes and gravelly, thinner, and less well developed soils.

This soil has good tilth and a thick root zone. It responds to management, and it is suited to moderately intensive use. Erosion is a hazard.

Most of this soil has been used, mainly for cotton, corn, and hay. About 35 percent of the acreage is now in cultivation; the rest is forested, pastured, and idle. Capability unit IIIe–2.

Huntington Series

The Huntington series consists of deep, well-drained, medium to strongly acid soils. These soils occur in level or depressed places along and at the heads of draws and small drainageways, mainly in the Alexandria and Choccolocco Valleys. Most areas range from 1 to 5 acres in size. The soils have developed in local alluvium that washed from the Dewey, Decatur, and Cumberland soils. The surface soil is a dark reddish-brown to dark-brown silt loam, and the subsoil is a dark reddish-brown, heavy silt loam or a light silty clay loam.

These soils have good tilth, and they are permeable. They are among the most fertile soils in the county and respond to management. They are well suited to intensive use for row crops, but occasionally young crops may be damaged by excess deposits of new alluvium. Erosion is not a problem.

About 64 percent of the acreage is now in row crops; the rest is about equally in pasture, in forest, or in idle areas.

A typical profile of a Huntington soil is given in the mapping unit Huntington silt loam, local alluvium, 0 to 2 percent slopes.

Huntington silt loam, local alluvium, 0 to 2 percent slopes (HuA).—This friable, highly productive soil has developed from local alluvium.

A profile from a moist, cultivated site in the NW¼SW¼ sec. 35, T. 14 S., R. 7 E., 0.3 mile south of Alexandria, Ala., is described as follows:

A_p 0 to 7 inches, dark reddish-brown (2.5YR 2/4) silt loam; weak, fine, crumb structure; friable when moist, slightly hard when dry, and slightly sticky when wet; strongly acid; gradual, wavy boundary; layer ranges from 6 to 10 inches in thickness.

C_1 7 to 40 inches, dark reddish-brown (2.5YR 2/4), heavy silt loam or light silty clay loam; weak, fine, crumb structure; friable when moist, slightly hard when dry, slightly sticky when wet; very strongly acid; layer ranges from 20 to 60 inches in thickness.

The surface layer ranges from dark brown and reddish brown to dark reddish brown; and the subsoil, from dark reddish brown to reddish brown. In a few places the surface soil and subsoil are a silty clay loam. Some areas with fine sandy loam to loam surface soils are included. Some areas are faintly mottled with shades of brown at depths of 24 to 36 inches, and the mottling increases with depth.

This soil has good tilth. Fertility and the supply of organic matter are high. Runoff is slow, and permeability is moderate. The infiltration rate is medium, and the capacity for available moisture is high to moderate. The soil responds to management and is suited to a wide range of crops. Erosion is not a problem, but the diversion of accumulated runoff from higher lying areas will prevent new deposits of alluvium from damaging young crops.

Most of the acreage has been used for cotton and corn. Capability unit I–2.

Jefferson Series

The Jefferson series consists of well-drained, strongly acid soils that occur in small areas on fans and on foot slopes in the Choccolocco, Colvin, and Coldwater Mountains. These soils have developed from old local alluvium that washed or sloughed from ridges of sandstone, shale, and Weisner quartzite. The surface soil is dark grayish-brown fine sandy loam, and the subsoil is yellowish-brown, light fine sandy clay. Fragments of sandstone and quartzite, as much as 8 inches in diameter, are on the surface and throughout the profile.

In many places the Jefferson soils are associated with the Anniston, Allen, Cane, and Locust soils. They are less red than the Anniston, Allen, and Cane soils. They are better drained and generally deeper than the Cane and Locust soils, and they lack the fragipan characteristic of these soils.

The less sloping areas of the soils in this series are easily protected from erosion, and they are suited to a wide range of crops. The stronger slopes require permanent vegetation to control erosion. About 33 percent of the acreage of the nonstony soil types is in cultivation. The present natural vegetation is mainly pine, oak, hickory, and gum. A typical profile of a Jefferson soil is given in the mapping unit Jefferson gravelly fine sandy loam, 2 to 6 percent slopes, eroded.

Jefferson gravelly fine sandy loam, 2 to 6 percent slopes, eroded (JeB2).—This friable soil has developed from old local alluvium on foot slopes and fans along the bases of ridges and mountains.

A profile from a moist, cultivated site in the SE¼SW¼ sec. 2, T. 13 S., R. 7 E., 1.4 miles west of Webster Chapel, is described as follows:

A_p 0 to 8 inches, dark grayish-brown (10YR 4/2) gravelly fine sandy loam; weak, fine, granular structure; very friable; fine roots abundant; strongly acid; clear, wavy boundary; layer ranges from 2 to 10 inches in thickness.

B_1 8 to 13 inches, yellowish-brown (10YR 5/4) gravelly fine sandy clay loam; weak, fine, granular and weak, fine, subangular blocky structure; friable; strongly acid; gradual, wavy boundary; layer ranges from 4 to 8 inches in thickness.

B_2 13 to 40 inches +, yellowish-brown (10YR 5/6), gravelly, light fine sandy clay; weak, fine to medium, subangular blocky structure; friable; strongly acid; layer ranges from 9 to 28 inches in thickness.

The color of the surface soil ranges from dark grayish brown and very dark grayish brown to gray. That of the subsoil ranges from light olive brown to strong brown and reddish yellow. In some areas the lower part of the subsoil is mottled brown and red. The thickness of the solum ranges from 15 to 46 inches. The underlying C or D material is variable in texture, color, and consistence. Small, severely eroded places are included. In these the plow layer is a brown gravelly fine sandy clay loam. Some areas have a few gullies. Also included are places in which the surface soil is a gravelly loam and some areas in which gravel is absent.

Except in severely eroded places, the tilth of this soil is good. Runoff and infiltration are medium. Permeability is moderate, and the capacity for available moisture is high. Natural fertility and the supply of organic matter are low. The root zone is thick. The soil responds readily to management, especially to fertilization and to additions of organic matter; and it is suitable for a wide range of crops. It can be used moderately intensively, but erosion is a hazard.

Nearly all of the acreage is used, mainly for cotton and corn. About 40 percent of the acreage is now cultivated; the rest is wooded, pastured, and idle. Capability unit IIe–2.

Jefferson gravelly fine sandy loam, 6 to 10 percent slopes, eroded (JeC2).—Stronger slopes and slightly more runoff distinguish this soil from Jefferson gravelly fine sandy loam, 2 to 6 percent slopes, eroded. A few places are severely eroded and contain gullies. The solum ranges from 24 to 40 inches in thickness.

Tilth in this soil is good. The root zone is thick. The soil responds to management, and it is well suited to moderately intensive use. Erosion is a hazard.

Most of the acreage has been used, chiefly for cotton and corn. About 26 percent of the acreage is now in cultivation; the rest is forested, pastured, and idle. Capability unit IIIe–2.

Jefferson gravelly fine sandy loam, 10 to 15 percent slopes, eroded (JeD2).—Stronger slopes, higher runoff, and a thinner solum distinguish this soil from the one described. Severely eroded places are common, and a few gullies have formed. In these places the surface layer is a brown gravelly fine sandy clay loam.

Tilth is poor in this soil. The root zone is moderately thick. The soil is poorly suited to frequent cultivation; erosion is a serious hazard.

Most of this soil has been used for cotton, corn, and hay. About 60 percent of the acreage is now in forest; the rest is in cultivated areas and idle areas. Capability unit IVe–2.

Jefferson stony fine sandy loam, 0 to 10 percent slopes (JfB).—Stronger slopes, thicker and darker surface soil, and sandstone and quartz stones in and on the soil distinguish this soil from Jefferson gravelly fine sandy loam, 2 to 6 percent slopes, eroded. The stones range from 3 to 8 inches in diameter. A few, small, scattered areas with moderate erosion are included.

This soil has poor tilth. Stones and the risk of erosion make this soil poorly suited to cultivation.

Nearly all of this soil is in forest; a few scattered, less stony areas are in cultivation and pasture. Capability unit IVe–4.

Jefferson stony fine sandy loam, 10 to 25 percent slopes (JfD).—Stronger slopes, a darker and thicker surface soil, a thinner solum, and stones of sandstone and quartz on and in the soil distinguish this soil from Jefferson gravelly fine sandy loam, 2 to 6 percent slopes, eroded. The stones range from 3 to 8 inches in diameter. A few eroded places in which many shallow gullies have formed are included.

This soil is unsuited to cultivation. Erosion is a serious hazard.

Most of this soil is in forest, the use for which it is best suited. Capability unit VIe–2.

Landisburg Series

The Landisburg series consists of moderately well drained, strongly acid soils that occur in small areas on fans and foot slopes along chert ridges. These soils have developed from old local alluvium that washed and sloughed from ridges of cherty limestone. The surface soil is dark grayish-brown cherty silt loam, and the subsoil is yellowish-brown to strong-brown cherty silty clay loam. In most places a compact layer, or fragipan, occurs at depths of 20 to 36 inches. Fragments of chert, as much as 3 inches in diameter, commonly are on and in the soil. A few small areas are free of chert.

Landisburg soils are associated with the Minvale, Lobelville, and Lee soils. They are not so deep or well drained as the redder Minvale, and they have better developed profiles and are better drained than the Lobelville and Lee soils.

These soils are fairly easily protected from erosion, and they are suitable for a wide range of crops. About 44 percent of the acreage is in cultivation. The present natural vegetation is mainly oak, hickory, and pine.

A typical profile of a Landisburg soil is described in the mapping unit Landisburg cherty silt loam, 2 to 6 percent slopes, eroded.

Landisburg cherty silt loam, 2 to 6 percent slopes, eroded (LaB2).—This friable soil has developed from old local alluvium on fans and foot slopes along the bases of chert ridges.

A profile of this soil from a moist, cultivated field in the SW¼NE¼ sec. 34, T. 13 S., R. 8 E., is described as follows:

A_p 0 to 6 inches, dark grayish-brown (10YR 4/2) cherty silt loam; weak, fine, crumb structure; friable; roots abundant; strongly acid; gradual, wavy boundary; layer ranges from 4 to 8 inches in thickness.

B_1 6 to 14 inches, yellowish-brown (10YR 5/4) cherty silty clay loam; weak, fine to medium, subangular blocky structure; friable; strongly acid; gradual, wavy boundary; layer ranges from 6 to 10 inches in thickness.

B_2 14 to 26 inches, yellowish-brown (10YR 5/6) to strong-brown (7.5YR 5/6) cherty silty clay loam; moderate, medium, subangular blocky structure; friable; strongly acid; clear, wavy boundary; layer ranges from 10 to 18 inches in thickness.

B_{3m} 26 to 38 inches +, brownish-yellow (10YR 6/6), cherty, light silty clay loam; common, medium, distinct mottles of reddish brown, very pale brown, and light brownish gray; moderate, medium, subangular blocky structure; firm; strongly acid.

The surface soil ranges from very dark gray to dark grayish brown in color. The subsoil ranges from yellowish brown to strong brown in color and from cherty silty

clay loam to light silty clay in texture. The lower part of the subsoil may contain a few mottles. There are a few uneroded areas and a few that are free of chert. In a few areas the fragipan is not noticeable. Some areas with cherty loam surface soils are included.

Tilth is fairly good. Runoff and infiltration are medium. Permeability is slow, and the capacity for available moisture is low. Natural fertility and supplies of organic matter are low. The root zone is thick. The soil responds to management, especially to fertilization and additions of organic matter, and it is suited to a fairly wide range of crops. It can be used moderately intensively, but runoff is a hazard.

Most of the soil has been used, chiefly for cotton, corn, and hay. About 48 percent of the acreage is now cultivated; the rest is pastured, forested, and idle. Capability unit IIe–5.

Landisburg cherty silt loam, 6 to 10 percent slopes, eroded (LaC2).—Stronger slopes, a thinner solum, and slightly more runoff distinguish this soil from Landisburg cherty silt loam, 2 to 6 percent slopes, eroded. In a few places severe erosion occurs. In these places the plow layer is a yellowish-brown cherty silty clay loam. A few shallow gullies have formed.

This soil has fairly good tilth except where it is severely eroded. The capacity for available moisture is low. Erosion is a significant hazard, but the soil is suited to moderately intensive use.

Most of the soil has been used, mainly for cotton, corn, and hay. About 34 percent of the acreage is now in cultivation; the rest is forested, pastured, and idle. Capability unit IIIe–5.

Lee Series

The Lee series consists of poorly drained, medium to strongly acid soils. These soils occur in small areas in sinks, on first bottoms, and along and at the heads of small drainageways throughout the cherty-ridge areas. Lee soils are developing in general and local alluvium that has washed mainly from limestone and cherty limestone. The surface soil commonly is dark gray to very dark gray silt loam and cherty silt loam. The subsoil is mottled light brownish-gray to light-gray cherty silt loam. About half of the acreage has chert fragments, as much as 2 inches in diameter, on and in the soil. A compact layer (fragipan or claypan) is at depths of 15 to 30 inches.

In most places, Lee soils are associated with the Lobelville, Lindside, Newark, Landisburg, and Clarksville soils. Lee soils are more poorly drained, lighter colored, and more highly mottled than the Lobelville, Lindside, and Newark soils. They are more poorly drained, more readily flooded, more highly mottled, and less developed than the Landisburg and Clarksville soils.

Lee soils are subject to flooding, and they are covered frequently by new silt. They have a limited value for agriculture. About 68 percent of the acreage is in forest consisting mainly of willow, ash, gum, poplar, and water oak.

A typical profile of a Lee soil is described in the mapping unit Lee silt loam and cherty silt loam, 0 to 2 percent slopes.

Lee silt loam and cherty silt loam, 0 to 2 percent slopes (LcA).—This poorly drained, poorly productive soil is on level flood plains and is subject to frequent flooding.

A profile of this soil from a moist, idle site in the SE¼SE¼ sec. 13, T. 13 S., R. 8 W., 0.2 mile north of Holders Store, is described as follows:

A_1 0 to 9 inches, dark-gray (10YR 4/1) to very dark gray (10YR 3/1), light cherty silt loam; weak, fine, crumb structure; friable; fine roots abundant; medium acid; clear, wavy boundary; layer ranges from 2 to 10 inches in thickness.

C_1 9 to 19 inches, light brownish-gray (2.5Y 6/2) to light-gray (2.5Y 7/2) cherty silt loam; weak, fine, crumb structure; friable; few roots; strongly acid; gradual, wavy boundary; layer ranges from 8 to 20 inches in thickness.

C_2 19 to 40 inches +, light brownish-gray (2.5Y 6/2) cherty silty clay; common, medium, distinct mottles of light olive brown (2.5Y 5/4); massive; firm; strongly acid.

The surface soil ranges from light gray to dark brown in color, and it is usually mottled. The subsoil ranges from gray or almost white to dark gray in color and from silt loam to heavy silty clay in texture. The alluvium is at depths ranging from 15 inches to 4 or 5 feet. Some areas having a light silty clay loam surface soil are included.

Tilth in this mapping unit is poor. Runoff is very slow. Infiltration, permeability, and internal drainage are slow. The capacity for available moisture is very low. Natural fertility and the supply of organic matter are low. The soil responds poorly to management and is suited to only a narrow range of crops. Overflow and poor drainage are the main hazards. If the soil is adequately drained and protected from flooding, fair yields of suitable crops or grasses can be expected. About 8 percent of the acreage is in cultivation; the rest is wooded, pastured, and idle. Capability unit IVw–1.

Lee silt loam, local alluvium, 0 to 2 percent slopes (LeA).—This soil is distinguished from Lee silt loam and cherty silt loam, 0 to 2 percent slopes, in that it is developing in local alluvium and is commonly free of chert. It occurs in sinks and along and at the heads of small drainageways. It is not so frequently flooded as Lee silt loam and cherty silt loam, 0 to 2 percent slopes.

Poor drainage is the main limitation. If adequately drained and protected from excessive runoff from adjacent higher land, the soil will produce fair yields of corn or forage crops. Grasses are better suited to this soil, however.

About 4 percent of the soil is used mainly for corn or hay; the rest is forested, pastured, and idle. Capability unit IVw–1.

Lehew Series

The Lehew series consists of shallow, well-drained, medium to strongly acid soils that have developed from the residuum of shale and fine-grained, platy sandstone. These soils occur in fairly large areas in the central part of the county and in several smaller areas in other parts. In uneroded areas Lehew soils consist of weak-red shaly loam, 10 to 20 inches thick, underlain by weak-red, partly weathered shale or fine-grained sandstone.

Lehew soils are associated with the Montevallo and the Rarden soils. They are more reddish and have coarser

texture than the Montevallo soils. They have coarser texture and are shallower, less mottled, and less developed than the Rarden soils. In addition, they have more rapid internal drainage.

About 76 percent is in forest consisting mainly of oak, hickory, and pine. Permanent vegetation is needed to protect the soil from erosion.

The Lehew soils occur with the Montevallo soils in such an intricate pattern that it was not feasible to map them separately. Consequently, they are mapped with the Montevallo in complexes. A typical profile of a Lehew soil is described in the mapping unit Lehew-Montevallo soils, 15 to 30 percent slopes. A typical profile of a Montevallo soil is described in the mapping unit Montevallo shaly silt loam, 15 to 40 percent slopes.

Lehew-Montevallo soils, 2 to 10 percent slopes, eroded (LhC2).—Milder slopes, medium runoff, and erosion in surface soil distinguish this mapping unit from Lehew-Montevallo soils, 15 to 30 percent slopes. Erosion has removed about half the original surface soil; some shallow gullies have formed.

This soil is poorly suited to cultivation because of the thin root zone, low capacity to hold moisture, and high erosion hazard.

Most of the soil has been used chiefly for cotton, corn, and hay. About 28 percent is now cultivated; the rest is wooded, pastured, or idle. Capability unit IVe–3.

Lehew-Montevallo soils, 10 to 15 percent slopes, eroded (LhD2).—Milder slopes and erosion in the surface soil distinguish this mapping unit from Lehew-Montevallo soils, 15 to 30 percent slopes. Erosion has removed about 60 percent of the original surface soil.

The soils in this mapping unit are very low in fertility and in supply of organic matter. They have a thin root zone, unfavorable tilth, and generally produce low yields of crops. Erosion is a serious hazard, and the soils are unsuited to cultivation.

Much of the soil has been used, chiefly for cotton, corn, and hay. About 71 percent of the acreage is now wooded; the rest is cropped, pastured, or idle. Capability unit VIe–3.

Lehew-Montevallo soils, 15 to 30 percent slopes (LhE).—This mapping unit consists of shallow, well-drained, friable soils with weakly developed profiles. They occur on uplands.

A profile of Lehew shaly loam from a moist, forested site in the SW¼NE¼ sec. 3, T. 15 S., R. 8 E., 0.9 mile west of Four Mile Church, is described as follows:

A_{11} 0 to 1 inch, dark reddish-brown (5YR 3/2) loam containing some partly decomposed leaves, twigs, and straw

A_{12} 1 to 4 inches, weak-red (2.5YR 4/2) shaly loam; weak, fine, granular structure; very friable; fine roots abundant; medium acid; gradual, smooth boundary; layer ranges from 0 to 4 inches in thickness.

A_3 4 to 12 inches, weak-red (2.5YR 4/2) shaly loam; weak, fine, granular and weak, fine, subangular blocky structure; friable; fine roots abundant; medium acid; gradual, smooth boundary; layer ranges from 5 to 8 inches in thickness.

B–C 12 to 20 inches, weak-red (2.5YR 4/2–5/2) shaly loam; weak, fine to medium, subangular blocky structure; friable; medium acid; gradual, smooth boundary; layer ranges from 5 to 8 inches in thickness.

C 20 to 30 inches, weak-red (2.5YR 5/2), partly weathered shale; medium acid; layer ranges from 6 to 15 inches in thickness.

D_r 30 inches +, weak-red (2.5YR 5/2) shale and fine-grained sandstone.

The color of Lehew soils ranges from weak red to light brownish gray; the texture ranges from shaly loam to gravelly fine sandy loam. The thickness of the solum ranges from 10 to 20 inches, but a few small areas are about 30 inches thick. Subsoil development is weak. In some areas, shale and sandstone fragments, as much as 2 inches in diameter, are on and in the soil. Some eroded places are included, and in these the 2- to 4-inch plow layer is a weak-red shaly loam.

This mapping unit has moderate to rapid runoff, internal drainage, and permeability. Infiltration is moderate, and the capacity for available moisture is low. Tilth is fair. Natural fertility and supplies of organic matter are low. The root zone is shallow. The response to management is fair, but the soil is suited only to a narrow range of crops. Most of the acreage is unsuited to cultivation. The hazard of erosion is high.

About 93 percent of the acreage is in forest; the rest is cultivated, pastured, or idle. Capability unit VIIe–2.

Lindside Series

The Lindside series consists of deep, moderately well drained, medium acid soils on first bottoms. These soils occur in the Alexandria Valley and in the southwestern part of the county. They are developing in general alluvium that washed from uplands underlain mainly by limestone, chert, and shale. The surface soil is dark-brown silt loam; the subsoil is slightly mottled, dark-brown silt loam.

In most places the Lindside soils are associated with the Dunning and the Melvin soils. They are better drained and less mottled than the Dunning and Melvin, and they are lighter textured than the Dunning.

Lindside soils are suited to a fairly wide range of crops. The present natural vegetation is poplar, sycamore, ash, and willow.

A typical profile of a Lindside soil is described in the mapping unit Lindside and Newark silt loams, 0 to 2 percent slopes.

Lindside silt loam, local alluvium, 0 to 2 percent slopes (LkA).—This soil is developing in local alluvium in depressions, on foot slopes, and along and at the heads of small drainageways. It is shallower than Lindside and Newark silt loams, 0 to 2 percent slopes, and is not subject to flooding.

This soil has good tilth. It responds to management and is well suited to moderately intensive use. The root zone is thick. Impaired drainage is a hazard to farming.

Most of the soil has been used, chiefly for corn and hay. About 47 percent of the acreage is now cropped; the rest is wooded, pastured, or idle. Capability unit IIIw–1.

Lindside and Newark silt loams, 0 to 2 percent slopes (LlA).—This mapping unit consists of one or both of these soils. They are developing in general alluvium on nearly level first bottoms subject to flooding. The Lindside soil is friable and productive.

A profile of Lindside silt loam from a moist pasture in the SW¼NE¼ sec. 5, T. 15 S., R. 7 E., 2.3 miles west of Alexandria, Ala., is described as follows:

A_{1p} 0 to 4 inches, dark-brown (7.5YR 3/2) silt loam; weak, fine, crumb structure; very friable; fine roots abundant; strongly acid; clear, wavy boundary; layer ranges from 2 to 10 inches in thickness.

A_{12} 4 to 19 inches, dark-brown (7.5YR 3/2) silt loam; weak, fine, crumb structure; friable; roots abundant; strongly acid; gradual, wavy boundary; layer ranges from 14 to 24 inches in thickness.

C_1 19 to 25 inches, dark-brown (7.5YR 3/2) silt loam; many, fine, faint mottles of grayish brown and red; weak, fine, crumb structure; friable; strongly acid; clear, wavy boundary; layer ranges from 4 to 8 inches in thickness.

C_{2g} 25 to 31 inches, olive-yellow (2.5Y 6/8) silty clay loam; many, medium, distinct mottles of yellowish brown, brown, and reddish brown; weak, fine, crumb structure; friable to firm; few concretions; strongly acid; diffuse, irregular boundary; layer ranges from 4 to 6 inches in thickness.

D 31 inches +, light olive-brown (2.5Y 5/6), heavy silty clay loam; many, medium, distinct mottles of yellowish brown, reddish brown, and very dark brown; weak, fine, subangular blocky structure; friable to firm; few small concretions; strongly acid.

The surface soil ranges from dark brown to dark grayish brown. The subsoil ranges from dark brown to strong brown; mottles vary in size and abundance. The D horizon varies in color and texture. The thickness of the alluvium ranges from 2 to 4 feet or more. Some areas having a loam and silty clay loam surface soil are included.

The Newark soil is somewhat poorly drained; its subsoil is more mottled than that of the Lindside. A profile of Newark silt loam from a moist pasture in the NW¼ sec. 35, T. 14 S., R. 7 E., 0.5 mile north of Alexandria, Ala., is described as follows:

A_p 0 to 9 inches, dark-brown (7.5YR 4/4) silt loam; weak, fine, crumb structure; friable; fine roots abundant; medium acid; clear, smooth boundary; layer ranges from 2 to 10 inches in thickness.

C_1 9 to 26 inches, very dark grayish-brown (10YR 3/2) silt loam; common, medium, distinct mottles of grayish brown; weak, fine, crumb structure; friable; medium acid; clear, smooth boundary; layer ranges from 12 to 44 inches in thickness.

C_2 26 to 42 inches +, light olive-brown (2.5Y 5/4) loam; common, fine, distinct mottles of dark brown to dark yellowish brown; weak, fine, crumb structure; friable; strongly acid; layer is 10 inches or more thick.

The surface soil ranges from dark brown to dark grayish brown in color. The C_1 horizon ranges from very dark grayish brown to dark brown in color and from silt loam to light silty clay loam in texture. Mottles in this layer vary in abundance and in shades of gray. Small concretions may be present in this horizon. Thickness of the alluvium ranges from 2 to 5 feet or more. Some areas with a light loam and silty clay loam surface soil are included.

Tilth of the soils in this mapping unit is good. Runoff is slow. Flooding is common during periods of prolonged rainfall or during heavy rains. Infiltration and internal drainage are medium; permeability is moderate. The capacity for available moisture is high. Natural fertility and the supply of organic matter are high. Because of impaired drainage, this mapping unit is suited to only a fairly wide range of crops. Moderate to high yields can be expected if the soil is adequately drained and protected from overflow. Corn and pasture are best suited.

Most of the mapping unit has been used, mainly for corn. More than 30 percent of the acreage is now in forest; less than 25 percent is in cultivation. Capability unit IIIw-1.

Linker Series

The Linker series consists of well-drained, strongly to very strongly acid soils that have developed from residuum of acid sandstone and shale. These soils occur in small areas on mountains and on some of the high sandstone ridges. Where eroded, the surface soil generally is a dark grayish-brown to very dark grayish-brown fine sandy loam. The subsoil is red to yellowish-red fine sandy clay. Fragments of sandstone, as much as 2 inches in diameter, are on the surface and throughout the profile.

Linker soils are associated with the Muskingum soils and Stony rough land, sandstone. They are generally thicker, redder, less sloping, and better developed than the Muskingum soils and Stony rough land, sandstone.

The Linker soils are fairly easily conserved, and they are suited to many kinds of crops. About 84 percent of the acreage is wooded or idle. The natural vegetation now is mainly pine, hickory, and mountain, post, and white oaks.

A typical profile of a Linker soil is given in the mapping unit Linker gravelly fine sandy loam, 6 to 10 percent slopes, eroded.

Linker gravelly fine sandy loam, 6 to 10 percent slopes, eroded (LnC2).—This friable soil is on the higher mountain ridges.

A profile of this soil taken from a moist, wooded site in the SE¼NW¼ sec. 32, T. 14 S., R. 9 E., 2 miles east of Whites Gap crossroads, is described as follows:

A_p 0 to 7 inches, dark grayish-brown (10YR 4/2) to very dark grayish-brown (10YR 3/2) gravelly fine sandy loam; weak, fine, granular structure; very friable; fine roots abundant; strongly acid; clear, wavy boundary; layer ranges from 4 to 9 inches in thickness.

A_2 7 to 10 inches, dark yellowish-brown (10YR 4/4) gravelly fine sandy loam; weak, fine, granular structure; very friable; fine roots plentiful; strongly acid to very strongly acid; diffuse, wavy boundary; layer ranges from 0 to 4 inches in thickness.

B_1 10 to 18 inches, yellowish-red (5YR 4/6–5/6) gravelly fine sandy clay loam; weak, fine to medium, subangular blocky and angular blocky structure; friable; very strongly acid; gradual, wavy boundary; layer ranges from 6 to 12 inches in thickness.

B_2 18 to 33 inches, red (2.5YR 4/6–4/8) fine sandy clay; weak, medium, subangular blocky and angular blocky structure; friable to slightly firm; very strongly acid; gradual, wavy boundary; layer ranges from 12 to 30 inches in thickness.

B_3 33 to 60 inches, red (2.5YR 4/8) fine sandy clay; many, medium, prominent mottles of yellowish brown and red; weak, medium, subangular blocky structure; friable to firm; very strongly acid; gradual, wavy boundary; layer ranges from 10 to 30 inches in thickness.

D_r 60 inches +, grayish-brown to reddish, partly weathered, acid sandstone.

The surface soil ranges from very dark grayish brown to light brownish gray in color. The subsoil ranges from

red and dark red to yellowish brown in color and from gravelly fine sandy clay to light fine sandy clay loam in texture. The thickness of the solum ranges from 32 to 85 inches. Some areas with fine sandy clay loam surface soil are included. There are a few severely eroded patches in which the plow layer is a reddish-brown gravelly fine sandy clay loam. There are also a few small areas that have slopes of less than 6 percent. A few shallow gullies occur in this soil.

The tilth of this soil is good except in severely eroded places. Runoff, internal drainage, and infiltration are medium. Permeability and the capacity for available moisture are moderate. Natural fertility and the supply of organic matter are low. The root zone is deep. The response to management is good, and the soil is suited to a wide range of crops, especially truck crops. Runoff is a hazard, but the soil can be used moderately intensively.

Most of this soil has been used, mainly for cotton and corn. Less than 10 percent of the acreage is now in cultivation; the rest is forested, pastured, and idle. Capability unit IIIe-2.

Lobelville Series

The Lobelville series consists of strongly acid, somewhat poorly drained soils in the chert ridges. They are developing in general alluvium and local alluvium that washed from cherty limestone and limestone. The surface soil commonly is a dark grayish-brown silt loam and cherty silt loam. The subsoil is pale-brown to light yellowish-brown silt loam or cherty silt loam. Fragments of chert, as much as 2 inches in diameter, are on and in the soil in about half the acreage.

In most places the Lobelville soils are associated with the Lee, Landisburg, and Clarksville soils. They are better drained, darker, and less mottled than the Lee soils. They are more poorly drained, are younger, and have less profile development than the Clarksville and the Landisburg soils. In addition, they are subject to overflow.

These soils are suited to a fairly wide range of crops. About 23 percent of the acreage is now cultivated. The natural vegetation is poplar, gum, sycamore, ash, and willow.

A typical profile of a Lobelville soil is given in the mapping unit Lobelville silt loam and cherty silt loam, 0 to 2 percent slopes.

Lobelville cherty silt loam, local alluvium, 0 to 2 percent slopes (LoA).—This soil differs from Lobelville silt loam and cherty silt loam, 0 to 2 percent slopes, in that it is developing in local alluvium, and it is not as frequently flooded. It occurs along and at the heads of small drainageways or draws.

Tilth of this soil is good. The root zone is thick. The soil responds to management, especially to fertilization and additions of organic matter. It is suited to a wide range of crops, and it can be used moderately intensively. Poor drainage is a hazard.

About 23 percent of the acreage is cropped; the rest is wooded, pastured, or idle. Capability unit IIIw-1.

Lobelville silt loam and cherty silt loam, 0 to 2 percent slopes (LpA).—This somewhat poorly drained, poorly productive soil is on flood plains. It is subject to frequent flooding. A profile from a moist pasture in the NE¼SE¼ sec. 29, T. 13 S., R. 8 E., 0.8 mile east of Pleasant Valley Church, is described as follows:

A_1 0 to 6 inches, dark grayish-brown (2.5Y 4/2) silt loam; weak, fine, crumb structure; friable; numerous fine roots; strongly acid; clear, smooth boundary; layer ranges from 0 to 10 inches in thickness.

C_1 6 to 13 inches, pale-brown (10YR 6/3) cherty silt loam; few, fine, faint mottles of gray and yellowish brown; weak, fine, crumb structure; friable; roots plentiful; strongly acid; gradual, smooth boundary; layer ranges from 6 to 18 inches in thickness.

C_2 13 to 26 inches, pale-brown (10YR 6/3) to light yellowish-brown (2.5Y 6/4) cherty silt loam; common, medium, distinct mottles of yellowish brown and a few mottles or concretions of very dark grayish brown; weak, fine, crumb structure; friable; strongly acid; gradual, smooth boundary; layer ranges from 8 to 26 inches in thickness.

D 26 to 42 inches, mottled, light brownish-gray (2.5Y 6/2), yellowish-brown (10YR 5/8), and dark-brown (7.5YR 4/4) cherty silty clay; moderate, medium, subangular blocky structure to massive; firm to very firm; small black concretions; strongly acid; layer ranges from 1 foot to several feet in thickness.

The surface soil ranges from light brownish gray to dark brown, and the subsoil from light brownish gray to grayish brown or dark grayish brown. A few areas have no chert; other areas are very cherty. The chert fragments on and in the soil range from ¼ to 3 inches in diameter. The thickness of the alluvium ranges from 14 inches to more than 48 inches. Some areas with light silty clay loam surface soil are included. In a few places, a compact layer is at depths of about 20 to 40 inches.

This mapping unit has slow runoff and internal drainage. Infiltration is medium, permeability is slow, and the capacity for available moisture is moderate. Natural fertility and the supply of organic matter are low. This mapping unit is suited to a fairly wide range of crops. It responds to management, especially to fertilization and additions of organic matter. Flooding and somewhat poor drainage are the main hazards. If adequately drained and protected from flooding, this soil will produce fair yields of crops or grasses.

About 22 percent of the soil is cultivated; the rest is pastured, wooded, or idle. Capability unit IIIw-1.

Locust Series

The Locust series consists of moderately well drained, strongly acid to very strongly acid soils on foot slopes and fans along the lower lying ridges. These soils have developed from old local alluvium that washed or sloughed from ridges and mountains of interbedded sandstone, shale, and cherty limestone. The surface soil is a dark grayish-brown fine sandy loam. The subsoil is a yellowish-brown fine sandy clay loam. A compact layer (fragipan) is at depths of 15 to 22 inches. Sandstone and quartz gravel, as much as 3 inches in diameter, are commonly on and in the soil. Some areas are free of gravel.

In many places the Locust soils are associated with the Anniston, Allen, Cane, and Jefferson soils. The Locust soils are distinguished from the Anniston, Allen, Jefferson, and Cane by the distinct fragipan, thinner solum,

and poorer drainage. They are not so red as the Anniston, Allen, and Cane soils.

These soils are easily conserved, and they are suited to a fairly wide range of crops. About 35 percent of the acreage is in cultivation. The present natural vegetation is mainly oak, hickory, and pine.

A typical profile of a Locust soil is given in the mapping unit Locust gravelly fine sandy loam, 2 to 6 percent slopes, eroded.

Locust gravelly fine sandy loam, 0 to 2 percent slopes (LsA).—Milder slopes, thicker surface soil, and slower runoff distinguish this soil from Locust gravelly fine sandy loam, 2 to 6 percent slopes, eroded.

This soil has good tilth. The response to management is moderately good, and the soil can be used intensively. However, the low capacity for available moisture reduces yields of crops.

Most of the acreage has been used, mainly for cotton and corn. About 40 percent of the acreage is now in crops; the rest is forested, pastured, or idle. Capability unit IIe–5.

Locust gravelly fine sandy loam, 2 to 6 percent slopes, eroded (LsB2).—This moderately well drained soil has developed in old local alluvium. The fragipan retards the movement of water and air and the spread of roots.

A profile from a moist, cultivated site in the NW¼SE¼ sec. 19, T. 15 S., R. 6 E., 1.2 miles north of Sulphur Springs, is described as follows:

A_p 0 to 6 inches, dark grayish-brown (10YR 4/2) gravelly fine sandy loam; weak, fine, granular structure; friable; strongly acid; clear, smooth boundary; layer ranges from 3 to 10 inches in thickness.

B_1 6 to 10 inches, yellowish-brown (10YR 5/4 5/6), light gravelly fine sandy clay loam or loam; weak, fine, subangular blocky structure; friable; very strongly acid; gradual, wavy boundary; layer ranges from 4 to 8 inches in thickness.

B_2 10 to 22 inches, yellowish-brown (10YR 5/6) fine sandy clay loam; weak and medium, subangular blocky structure; friable; few small concretions in lower part; very strongly acid; gradual, wavy boundary; layer ranges from 8 to 14 inches in thickness.

B_{3m} 22 to 27 inches, yellowish-brown (10YR 5/6), light silty clay or loam; common, medium, distinct mottles of strong brown (7.5YR 5/6), pale yellow (2.5Y 7/4), and light gray (2.5Y 7/2); moderate, medium, subangular blocky and platy structure; firm or compact; numerous concretions and small pieces of gravel; very strongly acid; gradual, wavy boundary; layer ranges from 4 to 30 inches in thickness.

D 27 to 40 inches +, mottled red (2.5YR 4/6), strong-brown (7.5YR 5/8), and yellowish-brown (10YR 5/8) silty clay; mottles are many, medium, and distinct; massive; firm; very strongly acid.

The surface soil ranges from dark grayish brown and very dark grayish brown to light brownish gray in color. The subsoil ranges from strong brown to light yellowish brown in color and from light fine sandy clay loam to fine sandy clay in texture. Depths to the fragipan range from 15 to 32 inches. Thicknesses of the alluvium range from 19 to 60 inches or more. Small areas that are free of gravel and have better tilth are included. Also included are severely eroded places in which the plow layer is brown or yellowish-brown gravelly fine sandy clay loam. A few shallow gullies occur in places. Some areas mapped with this soil have a loam surface layer.

The tilth of this soil is good except in the severely eroded places. Runoff and infiltration are medium. Permeability and internal drainage are slow. The capacity for available moisture is low. Natural fertility and the supply of organic matter are low. The soil responds well to management, especially to fertilization and additions of organic matter. It can be used moderately intensively and is suited to a fairly wide range of crops. Runoff and erosion are hazards.

Most of this soil has been used, mainly for corn, cotton, and hay. About 35 percent of the acreage is now cropped; the rest is wooded, pastured, or idle. Capability unit IIe–5.

Locust gravelly fine sandy loam, 6 to 10 percent slopes, eroded (LsC2).—Stronger slopes, thinner solum, and more runoff distinguish this soil from Locust gravelly fine sandy loam, 2 to 6 percent slopes, eroded. Included with this soil are some severely eroded places and those containing a few shallow gullies.

This soil has fair tilth. It responds moderately well to management and is fairly well suited to moderately intensive use. Erosion is a severe hazard.

Most of the soil has been used, mainly for cotton and corn. About 48 percent of the acreage is now wooded; the rest is cropped, pastured, or idle. Capability unit IIIe 5.

Masada Series

The Masada series consists of strongly acid, well-drained soils on low stream terraces. These soils occur along Choccolocco Creek, and unusually high water floods them. They have developed in old general alluvium that washed from weathered slate, phyllite, and schist. Some of the alluvium originated from sandstone and shale. In places not damaged by erosion, the surface soil is friable, dark-brown silt loam and the subsoil is yellowish-red silty clay loam.

These soils are commonly associated with the Sequatchie, Monongahela, Tyler, and Purdy soils. They are finer textured and firmer than the Sequatchie. They differ from the Monongahela and Tyler in having a finer texture and no fragipan and in being better drained and browner or redder.

The root zone is deep, and the soils are suited to many kinds of crops. Masada soils are easily conserved, and they respond to management. They are moderately fertile, and about 70 percent of the acreage is cultivated. The natural vegetation is mainly pine, oak, hickory, and gum.

The Masada soils were mapped with the Altavista soils as undifferentiated units in this county. A typical profile of a Masada soil is given in the mapping unit Altavista and Masada silt loams, low terraces, 0 to 2 percent slopes.

Melvin Series

The Melvin series consists of poorly drained, medium to strongly acid soils on first bottoms. These soils occur in small, narrow bands on the flood plains of many streams in the central and southern parts of the county. They are developing in general alluvium that has washed

mainly from limestone, chert, and shale. The surface soil commonly is mottled, dark-brown silt loam. The subsoil is highly mottled, grayish-brown silt loam.

In most places, Melvin soils are associated with the Lindside, Newark, and Dunning soils. They are more highly mottled and more poorly drained than Lindside and Newark soils. They are lighter gray and have lighter texture than the Dunning soils. The Melvin soils are subject to frequent flooding and are frequently covered by fresh deposits of silt. Because of poor drainage, more than half of the acreage is in forest. The trees are mainly willow, poplar, sycamore, ash, and water oak.

A typical profile for this series is given in the mapping unit Melvin silt loam, 0 to 2 percent slopes.

Melvin silt loam, 0 to 2 percent slopes (McA).—This is a deep, friable soil on first bottoms.

A profile from a moist, wooded site in the NE¼NE¼ sec. 25, T. 13 S., R. 8 E., 1 mile south of Holders Store, is described as follows:

A_{11} 0 to 4 inches, dark-brown (7.5YR 4/2) silt loam; a few, fine, faint mottles of very dark brown; weak, fine, crumb structure; friable; roots abundant; strongly acid; gradual, smooth boundary; layer ranges from 2 to 6 inches in thickness.

A_{12} 4 to 14 inches, dark-brown (7.5YR 4/2) to dark grayish-brown (10YR 4/2) silt loam; common, medium, distinct mottles of very dark grayish brown; weak, fine, crumb structure; friable; few roots; strongly acid; gradual, smooth boundary; layer ranges from 8 to 14 inches in thickness.

C_1 14 to 26 inches, grayish-brown (10YR 5/2) to light brownish-gray (10YR 6/2) silt loam; many, medium, distinct mottles of olive brown, light gray, and yellowish brown; weak, fine, crumb structure; friable; strongly acid; gradual, wavy boundary; layer ranges from 8 to 16 inches in thickness.

C_2 26 to 42 inches +, light brownish-gray (2.5Y 6/2) silty clay loam; many, medium, distinct mottles of very dark grayish brown, light gray, and yellowish brown; massive; firm; medium acid; layer ranges from 12 to 24 inches in thickness.

The surface soil ranges from dark brown to grayish brown. The subsoil ranges from grayish brown through light grayish brown to light gray. Mottles vary in abundance, intensity, size, and color. Depths to bedrock range from 2½ to 8 feet or more. Some areas having a light silty clay loam surface soil are included.

This soil has fairly good tilth. Runoff and internal drainage are very slow. Permeability is slow; infiltration is slow to medium. The capacity for available moisture is high. Natural fertility and the supply of organic matter are moderate. The soil responds fairly well to management, especially to fertilization and additions of organic matter but is suited to only a narrow range of crops. It is poorly suited to extensive use because of poor drainage and frequent flooding.

A small percentage of the soil has been used, mainly for corn and sorghum. At present, about 59 percent is in forest; the rest is cultivated, pastured, and idle. Capability unit IVw-1.

Mine Wash

Mine wash (Me).—This land type consists of the level areas above the dams, where sand, silt, and clay washed from iron ore and bauxite ore have settled. Iron-ore washings are normally red to reddish-brown, stratified sand, silt, and clay. Bauxite washings are light-gray, stratified silt and clay.

There is only a small acreage in this land type. It is variable in thickness, drainage, and composition and in the size of the area. Consequently, a capability classification has not been made. A few areas are used for pasture, but most of the acreage supports a stand of mixed hardwoods and pine.

Minvale Series

The Minvale series consists of well-drained, strongly acid soils that have developed from old local alluvium. This alluvium rolled or was washed from higher ridges underlain by cherty limestone and limestone. Minvale soils are in small areas throughout the county. The surface soil is dark-brown cherty silt loam, and the subsoil is a reddish-brown, cherty, light silty clay. Chert and limestone fragments, up to 3 inches in diameter, are commonly on and in the soil.

These soils are associated with the Landisburg, Clarksville, and Fullerton soils. The Minvale soils are deeper, darker colored, and better drained than the Landisburg soils. They occupy lower positions, are darker colored, and have less chert than the Clarksville soils. They occupy lower positions and are more friable, more weakly developed, and lighter textured than the Fullerton soils on the uplands.

Minvale soils are fairly easily conserved, and they are suited to a wide range of crops. The natural vegetation is pine, oak, hickory, and gum.

A typical profile of a Minvale soil is given in the mapping unit Minvale cherty silt loam, 2 to 6 percent slopes, eroded.

Minvale cherty silt loam, 2 to 6 percent slopes, eroded (MnB2).—This moderately deep, friable soil has developed in old local alluvium on foot slopes along the bases of chert ridges.

A profile from a moist, cultivated site is described as follows:

A_p 0 to 7 inches, dark-brown (7.5YR 4/4) cherty silt loam; weak, fine, crumb structure; friable; numerous fine roots; strongly acid; clear, smooth boundary; layer ranges from 2 to 10 inches in thickness.

B_1 7 to 13 inches, yellowish-red (5YR 4/6) cherty silty clay loam; weak, fine, subangular blocky structure; friable; very strongly acid; gradual, wavy boundary; layer ranges from 4 to 12 inches in thickness.

B_2 13 to 24 inches, reddish-brown (5YR 4/4) to yellowish-red (5YR 4/6), cherty, light silty clay; weak, fine and medium, subangular blocky structure; friable; very strongly acid; gradual, wavy boundary; layer ranges from 10 to 20 inches in thickness.

B_3 24 to 36 inches, mottled yellowish-red (5YR 4/6) and light reddish-brown (5YR 6/4) cherty silty clay loam; weak, fine, subangular blocky structure; friable; very strongly acid; clear, wavy boundary; layer ranges from 8 to 12 inches in thickness.

D 36 to 48 inches +, variously colored chert and silty clay; massive; firm; very strongly acid; several feet thick.

The surface soil ranges from dark brown to dark reddish brown in color. The subsoil ranges from reddish brown to yellowish red in color and from cherty, light silty clay to cherty silty clay loam in texture. There are a few severely eroded areas and a few that are free of chert. Some areas having a silt loam surface soil are included.

The tilth of this soil is good. Runoff, internal drainage, and infiltration are medium. Permeability is rapid. The capacity for available moisture is fair to good. The root zone is thick. Natural fertility is moderate, and the supply of organic matter is low. The soil responds to management, especially to fertilization and to additions of organic matter, and it is suited to a wide range of crops. It can be used with moderate intensity, but runoff is a hazard.

Most of the soil has been used, mainly for cotton and corn. About 52 percent of the acreage is cropped; the rest is wooded, pastured, or idle. Capability unit IIe 3.

Monongahela Series

The Monongahela series consists of moderately well drained, strongly acid soils on low stream terraces along many creeks in the county. These soils have developed in alluvium that has washed from soils derived mainly from sandstone and shale and to a less extent from limestone and other material.

In eroded areas, the surface soil is commonly dark grayish-brown to grayish-brown loam, and the subsoil is yellow to brownish-yellow fine sandy clay loam. A compact layer (fragipan) is at depths ranging from 15 to 32 inches. Small concretions, up to one-fourth inch in diameter, are commonly on and in the soil.

In most places the Monongahela soils are associated with the Nolichucky, Holston, Sequatchie, Tyler, and Purdy soils and in a few places with the Altavista and Masada soils. The Monongahela soils have a fragipan; they are not so well drained as the Nolichucky, Sequatchie, and Holston soils and have a thinner solum than those soils. They are better drained and not so mottled as the Tyler and Purdy soils. Generally, they are coarser, less well drained, and not so brown as the Altavista and Masada soils.

These fairly productive soils are easily conserved, and they are suited to a fairly wide range of crops. The present natural vegetation is mainly oak, hickory, pine, and some gum. About 58 percent of the soil is cultivated.

A typical profile of a Monongahela soil is given in the mapping unit Monongahela loam, 0 to 2 percent slopes.

Monongahela loam, 0 to 2 percent slopes (MoA).—This soil is on stream terraces. The fragipan retards the movement of air and water and the growth of roots.

A profile from a moist forest of second-growth trees in the NW¼NE¼ sec. 13, T. 15 S., R. 5 E., 1.5 miles west of the church near Boiling Springs, is described as follows:

A_p 0 to 5 inches, dark grayish-brown (2.5Y 4/2) loam; weak, fine, granular or crumb structure; very friable; strongly acid; diffuse, wavy boundary; layer ranges from 4 to 8 inches in thickness.

B_1 5 to 10 inches, light yellowish-brown (2.5Y 6/4) fine sandy clay loam; weak, fine, granular to subangular blocky structure; friable; strongly acid; gradual, wavy boundary; layer ranges from 4 to 7 inches in thickness.

B_{21} 10 to 16 inches, pale-yellow to yellow (2.5Y 7/4–7/6) fine sandy clay loam; weak, fine, subangular blocky structure; friable; strongly acid; gradual, wavy boundary; layer ranges from 4 to 8 inches in thickness.

B_{22} 16 to 20 inches, yellow to pale-yellow (2.5Y 7/6–7/4) fine sandy clay loam; a few, fine, faint mottles of brown and brownish gray; weak, medium, subangular blocky structure; friable; strongly acid; gradual, wavy boundary; layer ranges from 3 to 9 inches in thickness.

B_{3m} 20 to 38 inches +, mottled yellow (2.5Y 7/6), light-gray (10YR 7/2), brown (7.5YR 5/2), and some red (2.5YR 5/6), light fine sandy clay loam; massive; compact or weakly cemented in place but friable when dug out; strongly acid.

The surface soil ranges from dark grayish brown to dark brown in color. The subsoil ranges from pale yellow to strong brown in color, and from fine sandy clay loam to fine sandy clay in texture. A few, small, scattered areas have gravel, as much as 3 inches in diameter, on and in the soil. Some small areas have a 2- to 4-inch layer of reddish-brown silt loam that was washed from higher lying soils. The fragipan varies in color, thickness, and hardness. The alluvium ranges in thickness from 2 to 10 feet or more. Some areas having a fine sandy loam surface soil are included.

The tilth of this soil is good. Runoff and infiltration are medium. Permeability and internal drainage are slow. The capacity to hold moisture is low to fair. Fertility and the supply of organic matter are low. The soil responds well to management, but it is suited to only a limited range of crops because of the fragipan.

Nearly all this soil has been used for cotton and corn. About 56 percent of the acreage is now in cultivation; the rest is forested, pastured, or idle. Capability unit IIe–5.

Monongahela loam, 2 to 6 percent slopes, eroded (MoB2).—Stronger slopes, more runoff, and a thinner surface soil distinguish this soil from Monongahela loam, 0 to 2 percent slopes. A few severely eroded patches in which the plow layer is a light yellowish-brown fine sandy clay loam are included with this soil. There are a few shallow gullies in places.

This soil has good tilth. It responds well to management and can be used moderately intensively. Runoff is a hazard.

Most of the soil has been used, chiefly for cotton, corn, and hay. About 60 percent of the acreage is now in cultivation. The rest is forested, pastured, or idle. Capability unit IIe–5.

Montevallo Series

The Montevallo series consists of shallow, well-drained, strongly acid soils. These soils are fairly extensive in the northern part but occur throughout the county. They have developed in the residuum of interbedded shale and fine-grained sandstone or limestone. Where these soils are not eroded, the surface soil is very dark grayish-brown to very dark brown shaly silt loam. The subsoil is yellowish-brown shaly silt loam. Fragments of shale, less than 2 inches square, are commonly on and in the soil.

Montevallo soils are associated with the Lehew, Rarden, Conasauga, and Enders soils. They are browner and have a finer texture than the Lehew soils. They are better drained, shallower, and more strongly acid than the Conasauga soils.

Permanent vegetation will control erosion on these soils. About 78 percent of the acreage is in forest.

A typical profile of a Montevallo soil is given in the mapping unit Montevallo shaly silt loam, 15 to 40 percent slopes.

Montevallo shaly silt loam, 10 to 15 percent slopes (MsD).—Milder slopes, slower runoff, and a slightly thicker solum distinguish this soil from Montevallo shaly silt loam, 15 to 40 percent slopes. In the few cleared areas, the surface soil is thinner and is a brown shaly silt loam.

The thin root zone, fair tilth, high erosion hazard, and low capacity for available moisture make this soil generally unsuitable for cultivation.

This is the most extensive of the Montevallo soils. About 90 percent of it is now in forest; the rest is cultivated, pastured, or idle. Capability unit VIe–3.

Montevallo shaly silt loam, 15 to 40 percent slopes (MsE).—This shallow, friable soil has developed in residuum on uplands.

A profile from a moist, forested site in the SE¼NW¼ sec. 35, T. 14 S., R. 6 E., 0.4 mile north of Middleton, is described as follows:

A_{11} 0 to 2 inches, very dark grayish-brown (10YR 3/2) to very dark brown (10YR 2/2) shaly silt loam; weak, fine, granular structure; very friable; fine roots abundant; strongly acid; clear, smooth boundary; layer ranges from 1 to 2 inches in thickness.

A_{12} 2 to 6 inches, dark-brown (10YR 4/3) shaly silt loam; weak, fine, granular structure; very friable; roots plentiful; strongly acid; clear, wavy boundary; layer ranges from 3 to 6 inches in thickness.

C_1 6 to 15 inches, yellowish-brown (10YR 5/4) shaly silt loam; weak, fine, crumb structure; friable; roots plentiful; strongly acid; clear, wavy boundary; layer ranges from 6 to 12 inches in thickness.

D_r 15 inches +, black, dark-gray, and light-gray shale and fine-grained sandstone; strongly acid.

The surface soil ranges from very dark grayish brown and very dark brown to brown or dark brown. The C horizon ranges from yellowish brown to yellowish red in color and from shaly silt loam to shaly silty clay in texture. The D_r horizon is at depths ranging from 10 to 20 inches. A few small areas have a thin, weakly developed B horizon. There are some eroded places. Some areas are included in which the surface soil is shaly or gravelly silt loam and loam to sandy loam.

This soil has fair tilth. Runoff, internal drainage, and permeability are rapid. Infiltration is medium. The capacity for available moisture is low. Natural fertility and the supply of organic matter are low. The root zone is thick. The response to management is fair, but the soil is suited to only a narrow range of crops. These characteristics and the risk of erosion make this soil unsuited to cultivation.

A small percentage of the soil has been cropped. About 95 percent of the acreage is now in forest; the rest is cropped, pastured, or idle. Capability unit VIIe–2.

Montevallo shaly silty clay loam, 6 to 10 percent slopes, severely eroded (MtC3).—Milder slopes, a thinner solum, and severe erosion distinguish this soil from Montevallo shaly silt loam, 15 to 40 percent slopes. Erosion has removed all or nearly all of the original surface soil. The 3- to 5-inch plow layer is now a yellowish-brown shaly silty clay loam.

The thin root zone, low capacity for available moisture, and high erosion hazard make this soil generally unsuitable for cultivation.

Most of this soil has been used, chiefly for cotton, corn, and hay. About 15 percent of the acreage is now in cultivation; the rest is forested, pastured, or idle. Capability unit VIe–3.

Montevallo shaly silty clay loam, 10 to 40 percent slopes, severely eroded (MtD3).—More runoff, severe erosion, and a thinner solum distinguish this soil from Montevallo shaly silt loam, 15 to 40 percent slopes. Erosion has removed all or nearly all of the original surface soil. The 2- to 4-inch plow layer is now a yellowish-brown shaly silty clay loam.

The high erosion hazard, low capacity for available moisture, and thin root zone make this soil unsuited to cultivation.

Most of the soil has been used, chiefly for cotton, corn, and hay. About 5 percent of the acreage is now in cultivation; the rest is forested, pastured, or idle. Capability unit VIIe–2.

Muskingum Series

The Muskingum series consists of well-drained, strongly acid soils that occur in this county in small areas on the mountains and high ridges. These soils have developed in residuum from acid sandstone and shale. Where uneroded, the surface soil commonly is a very dark grayish-brown fine sandy loam. The subsoil is a yellowish-brown loamy fine sand. Stones up to 10 inches in diameter commonly are on and in the soils.

In most places the Muskingum soils are associated with the Linker soils and with Stony rough land, sandstone. They are usually thinner, lighter colored, and more weakly developed than the Linker soils. They are deeper, more uniform in color, and on smoother topography than Stony rough land, sandstone.

The present natural vegetation is chiefly white and post oaks and shortleaf pine. About 93 percent of the acreage is in forest.

A typical profile of a Muskingum soil is given in the mapping unit Muskingum stony fine sandy loam, 10 to 15 percent slopes.

Muskingum stony fine sandy loam, 10 to 15 percent slopes (MuD).—This stony, shallow soil is on the mountains and high ridges.

A profile from a moist, wooded site in the SW¼NW¼ sec. 1, T. 15 S., R. 8 E., 0.5 mile north of Anniston Beach, is described as follows:

A_{00} ½ to 0 inch, partly weathered leaves and twigs.

A_1 0 to 3 inches, very dark grayish-brown (10YR 3/2) stony fine sandy loam; weak, fine, granular structure; very friable; roots abundant; very strongly acid; gradual, wavy boundary; layer ranges from 0 to 4 inches in thickness.

A_2 3 to 9 inches, light brownish-gray (2.5Y 6/2) stony fine sandy loam; weak, fine, granular structure; very friable; roots abundant; very strongly acid; gradual, wavy boundary; layer ranges from 4 to 8 inches in thickness.

C 9 to 20 inches, light brownish-gray (2.5Y 6/2) to light olive-brown (2.5Y 5/4) stony loamy fine sand; weak, fine, granular structure; very friable; roots plentiful; very strongly acid; abrupt, irregular boundary; layer ranges from 6 to 12 inches in thickness.

D_r 20 inches +, sandstone and quartz ranging from dark grayish brown to yellowish red.

The surface soil ranges from very dark grayish brown to light brownish gray. The subsoil ranges from yellow-

ish brown to yellowish red in color and from loamy fine sand to light fine sandy clay loam in texture. The solum ranges from 10 to 24 inches in thickness. There are a few, small eroded places that are free of stone. Some areas having a surface soil of stony loamy fine sand are included.

The tilth is poor. Runoff and infiltration are medium. Permeability and internal drainage are rapid. The capacity for available moisture is low. Natural fertility and the supply of organic matter are low. The root zone is thin. The soil responds fairly well to management, but it is suited to only a narrow range of crops. It is generally unsuitable for cultivation.

This is the least extensive of the Muskingum soils. About 87 percent of the acreage is woodland; the rest is cultivated, pastured, or idle. Capability unit VIe–2.

Muskingum stony fine sandy loam, 15 to 25 percent slopes (MuE).—This soil differs from Muskingum stony fine sandy loam, 10 to 15 percent slopes, in having stronger slopes, more runoff, and a thinner solum.

Poor tilth, low capacity for available moisture, and the high risk of erosion make this soil unsuitable for cultivation. The few cleared areas should be allowed to reseed to pine.

This is the most extensive of the Muskingum soils. About 95 percent of the acreage is wooded; the rest is cultivated, pastured, or idle. Capability unit VIIe–2.

Newark Series

The Newark series consists of somewhat poorly drained, medium acid soils on first bottoms. These soils occur in the Alexandria Valley and in the southwestern part of the county. They are developing in general alluvium that washed from uplands underlain mainly by limestone, chert, and shale. The surface soil is dark-brown silt loam; the subsoil is slightly mottled, dark-brown silt loam.

In most places the Newark soils are associated with the Dunning and the Melvin soils. They are better drained and less mottled than the Melvin and the Dunning, and they are lighter textured than the Dunning.

The soils are suited to a fairly wide range of crops. The present natural vegetation is poplar, sycamore, ash, and willow.

The Newark soils in this county are mapped as an undifferentiated unit with the Lindside soils. A typical profile of a Newark soil is given in the mapping unit Lindside and Newark silt loams, 0 to 2 percent slopes.

Nolichucky Series

The Nolichucky series consists of well-drained, strongly to very strongly acid soils on high stream terraces. These soils occur mainly as small areas in the southwestern part of the county. They have developed from old general alluvium that has washed mainly from soils underlain by sandstone and shale. The surface soil is dark grayish-brown to light brownish-gray fine sandy loam. The subsoil is yellowish-red to red fine sandy clay loam. Rounded gravel of sandstone, quartz, and limestone, up to 2 inches in diameter, is commonly on or in the soils.

The Nolichucky soils are generally associated with the Holston, Sequatchie, Monongahela, Tyler, and Purdy soils. They are deeper, redder, and better oxidized than the associated soils. They are better drained and have less mottling than the Monongahela, Tyler, and Purdy soils, and they lack the fragipan characteristic of those soils.

The Nolichucky soils are fairly easily conserved, and they are suited to a wide range of crops. The present natural vegetation is chiefly pine, oak, and hickory. About 49 percent of the acreage is in cultivation or in pasture.

A typical profile of a Nolichucky soil is given in the mapping unit Nolichucky gravelly fine sandy loam, 2 to 6 percent slopes, eroded.

Nolichucky gravelly fine sandy loam, 2 to 6 percent slopes, eroded (NcB2).—This friable soil has developed in old general alluvium on stream terraces.

A profile from a moist, cultivated site is described as follows:

A_p 0 to 6 inches, dark grayish-brown (2.5Y 4/2) gravelly fine sandy loam; structureless to weak, fine, granular structure; very friable; very strongly acid; clear, wavy boundary; layer ranges from 2 to 12 inches in thickness.

B_1 6 to 14 inches, yellowish-brown (10YR 5/8) gravelly fine sandy clay loam; weak, fine, granular and weak, fine, subangular blocky structure; friable; very strongly acid; gradual, wavy boundary; layer ranges from 4 to 8 inches in thickness.

B_2 14 to 23 inches, yellowish-red (5YR 4/6) fine sandy clay loam to fine sandy clay; weak to moderate, fine to medium, subangular blocky structure; friable; very strongly acid; gradual, wavy boundary; layer ranges from 6 to 18 inches in thickness.

B_3 23 to 56 inches +, red (2.5YR 4/6) fine sandy clay; few, fine, faint mottles of yellowish brown and brownish yellow; weak, medium, subangular blocky structure; friable to firm; very strongly acid.

The surface soil ranges from dark grayish brown to light brownish gray in color. The subsoil ranges from strong brown to red in color, and from fine sandy clay loam to fine sandy clay in texture. The alluvium ranges from 2 to 7 feet or more in thickness. Included are a few small areas having a dark-brown surface soil and a dark-red clay loam subsoil. There are also some severely eroded places in which the plow layer is a yellowish-brown to reddish-brown gravelly fine sandy clay loam. In places there are a few shallow gullies. Some areas having a very fine sandy loam surface soil are also included. This soil is underlain in places by beds of gravel or sand.

This soil has good tilth except where it is severely eroded. Runoff, internal drainage, and permeability are medium. The capacity for available moisture is moderate to high. Natural fertility and the supply of organic matter are low. The root zone is thick. The soil responds very well to management, especially to fertilization, and it is suited to a wide range of crops. It can be used moderately intensively, but runoff is a hazard.

Nearly all of the soil has been used, mainly for cotton and corn. More than 65 percent of the acreage is now in cultivation or in pasture; the rest is forested and idle. Capability unit IIe–2.

Nolichucky gravelly fine sandy loam, 6 to 10 percent slopes, eroded (NcC2).—Stronger slopes, more runoff, and a thinner solum distinguish this soil from Nolichucky gravelly fine sandy loam, 2 to 6 percent slopes, eroded. Severely eroded patches are common; they have a yellow-

ish-brown to reddish-brown gravelly fine sandy clay loam plow layer and more runoff than elsewhere. Gullies are also common. Included also with this soil are a few small areas having slopes of more than 10 percent and thinner and more weakly developed profiles.

Good tilth, a thick root zone, and the ability to respond to good management make this soil suitable for intensive use. However, erosion is a significant hazard.

Most of the soil has been used, mainly for cotton and corn. About 37 percent of the acreage is now in cultivation. The remaining acreage is forested, pastured, and idle. Capability unit IIIe–2.

Philo Series

The Philo series consists of strongly acid, moderately well drained soils that are developing in local and general alluvium. The parent material washed mainly from sandstone and shale, but some of it originated from limestone. Philo soils occur on first bottoms along most streams in the northern part of the county and along Choccolocco Creek in the eastern part. The surface soil is very dark grayish-brown to dark-brown fine sandy loam, and the subsoil is dark-brown, slightly mottled fine sandy loam.

In most places these soils are associated with the Stendal, Pope, and Atkins soils. They have better natural drainage than the Stendal soils, but both soils are subject to flooding. Philo soils are more mottled and more poorly drained than the Pope, and they are less mottled and better drained than the Stendal and the Atkins soils.

Philo soils are suited to a fairly wide range of crops. The present natural vegetation is mainly water oak, ash, sycamore, maple, and pine.

In Calhoun County, the Philo soils are mapped with the Stendal in undifferentiated units. A typical profile of a Philo soil is given in the mapping unit Philo and Stendal fine sandy loams, 0 to 2 percent slopes. A typical profile of a Stendal soil is also given.

Philo and Stendal fine sandy loams, 0 to 2 percent slopes (PnA).—This mapping unit consists of one or both of these soils, which are developing in general alluvium on nearly level first bottoms subject to flooding.

A profile of Philo fine sandy loam from a moist, idle site in the NW¼NW¼ sec. 13, T. 13 S., R. 9 E. is described as follows:

A_{1p} 0 to 5 inches, very dark grayish-brown (10YR 3/2) fine sandy loam; first inch stained by organic matter; weak, fine, granular structure; friable; roots abundant; strongly acid; gradual, wavy boundary; layer ranges from 6 to 14 inches in thickness.

A_{12} 5 to 17 inches, dark-brown (10YR 4/3) to very dark grayish-brown (10YR 3/2) fine sandy loam; weak, fine, granular structure; friable; numerous wormholes; fine roots abundant; strongly acid; clear, smooth boundary; layer ranges from 10 to 18 inches in thickness.

C 17 to 23 inches, mottled dark-brown (10YR 4/3), yellowish-brown (10YR 5/4), and very dark grayish-brown (10YR 3/2) fine sandy loam; weak, fine, granular structure; friable; strongly acid; gradual, smooth boundary; layer ranges from 8 to 14 inches in thickness.

C_2 23 to 38 inches, mottled yellowish-brown (10YR 5/4), dark yellowish-brown (10YR 4/4), and black (10YR 2/1), light fine sandy clay loam; weak, fine, granular structure and some weak, fine, subangular blocky structure; firm; concretions of manganese or iron, ⅛ to ¼ inch in diameter; strongly acid; gradual, smooth boundary; layer ranges from 0 to 20 inches in thickness.

The surface soil ranges from very dark grayish brown and grayish brown to dark brown. The subsoil ranges from dark brown to yellowish brown. Mottles in the lower part vary in size and number. A few areas are weakly cemented at depths of 30 to 38 inches. Included are some areas having a silt loam surface soil.

The Stendal member of this undifferentiated mapping unit is somewhat poorly drained. The subsoil is more mottled than that in the Philo soils.

A profile of Stendal fine sandy loam from a moist, cultivated site in the NE¼NW¼ sec. 20, T. 14 S., R. 8 E., 0.7 mile northeast of Lyden Mill, is described as follows:

A_{1p} 0 to 8 inches, very dark grayish-brown (10YR 3/2) fine sandy loam; weak, fine, granular structure; friable; fine roots abundant; strongly acid; clear, wavy boundary; layer ranges from 6 to 10 inches in thickness.

A_{12} 8 to 12 inches, dark grayish-brown (10YR 4/2) very fine sandy loam; few to common, fine, faint mottles of grayish brown; weak, fine, granular structure; friable; strongly acid; gradual, wavy boundary; layer ranges from 4 to 8 inches in thickness.

C 12 inches +, yellowish-brown (10YR 5/4) fine sandy loam; common, fine and medium, distinct mottles of grayish brown; weak, fine, granular structure; friable; strongly acid; layer ranges from 14 to 40 inches in thickness.

The color of the surface soil ranges from dark grayish brown (10YR 4/2) and dark gray (10YR 4/1) to very dark grayish brown (10YR 3/2). Abundance, intensity, size, and color of the mottlings in the profile vary. A few areas are weakly cemented at depths of 24 to 36 inches. Some areas having a silt loam surface soil are included.

The soils of this mapping unit have good tilth. Runoff is slow, and flooding commonly occurs during long rains or heavy rains of short duration. Infiltration is medium and permeability is moderate. The capacity for available moisture is high. Natural fertility is moderate; supplies of organic matter are high. The soils are suited to a fairly wide range of crops. If they are drained adequately and protected from overflow, good to high yields of crops can be expected.

Most of this mapping unit has been used, mainly for corn and hay. About 40 percent of the acreage is now in forest, and less than 25 percent is in cultivation. Capability unit IIIw–1.

Philo and Stendal silt loams, 0 to 2 percent slopes (PlA).—The silt loam surface soils and slightly slower infiltration distinguish this mapping unit from Philo and Stendal fine sandy loams, 0 to 2 percent slopes.

Tilth is not so good as in the latter soil. The finer textured surface soil forms clods if it is plowed when too wet. The root zone is thick, and the capacity to hold available moisture is high. The soils respond well to management, and they are suited to intensive use. Overflow and impaired drainage are hazards.

More than half the mapping unit is in forest, and less than 29 percent is in cultivation. The rest is pastured and idle. Capability unit IIIw–1.

Philo and Stendal soils, local alluvium, 0 to 2 percent slopes (PkA).—This mapping unit is on foot slopes and along and at the heads of small drainageways or draws. It occurs throughout the county in areas that are 1 to 10 acres in size. The soils are variable in color, texture, and consistence. The drainage ranges from somewhat poor to moderately good. Water stands on the surface for short periods, and there are a few seepage areas.

Impaired drainage is the main hazard. If these soils are adequately drained and protected from excess runoff from adjacent higher areas, they will produce moderate to high yields of most commonly grown crops. Corn, pasture, and forage crops are well suited to these soils.

Most of the mapping unit has been cleared and cultivated. About 38 percent of the acreage is now cultivated, and most of the rest is wooded and idle. Capability unit IIIw-1.

Pope Series

The Pope series consists of deep, well-drained, strongly to very strongly acid soils on first bottoms. These soils occur most extensively along the Coosa River and Ohatchee and Choccolocco Creeks and along many small streams and creeks. They are developing in general alluvium that has washed from soils underlain by sandstone and shale. In many places the alluvium is from materials that have washed from soils underlain by limestone. The surface soil is dark-brown to dark grayish-brown fine sandy loam to silt loam. The subsoil is dark-brown fine sandy loam or silt loam.

The Pope soils are the well drained members of the catena that includes the moderately well drained Philo, the somewhat poorly drained Stendal, and the poorly drained Atkins soils. They are less mottled than these associated soils.

The present natural vegetation is chiefly maple, poplar, sycamore, gum, water oak, and some pine.

A typical profile of a Pope soil is given in the mapping unit Pope silt loam, 0 to 2 percent slopes.

Pope fine sandy loam, 0 to 2 percent slopes (PoA).—The fine sandy loam surface soil, slightly higher rate of infiltration, and usually better tilth distinguish this soil from Pope silt loam, 0 to 2 percent slopes. Most of the acreage is underlain by unconsolidated beds of sand, sandy clay, and gravel at depths ranging from 40 to 60 inches. Included with this soil are some small areas or pockets of loamy sand or loamy fine sand.

This soil has good tilth. It responds well to management and is well suited to intensive use. The root zone is thick. Flooding is a hazard.

Most of the soil has been used, chiefly for corn and occasionally for cotton. About 47 percent of the acreage is in cultivation; the rest is forested, pastured, and idle. Capability unit IIw-1.

Pope silt loam, 0 to 2 percent slopes (PpA).—This friable, highly productive soil is developing in general alluvium on first bottoms or flood plains.

A profile from a moist, cultivated site in the NE¼NE¼ sec. 18, T. 15 S., R. 6 E., 0.3 mile south of Boiling Springs, Ala., is described as follows:

A_p 0 to 9 inches, dark-brown (10YR 4/3) silt loam; weak, fine, crumb structure; friable; fine roots abundant; very strongly acid; gradual, smooth boundary; layer ranges from 6 to 12 inches in thickness.

C_1 9 to 29 inches, dark-brown (7.5YR 4/4), heavy silt loam; weak, fine, crumb structure and some very weak, fine, subangular blocky structure; friable; roots plentiful; strongly acid; gradual, smooth boundary; layer ranges from 20 to 40 inches in thickness.

C_2 29 to 40 inches, dark yellowish-brown (10YR 4/4), light silty clay loam; common, medium, faint mottles of black and yellowish brown; weak, fine, crumb structure and some weak, fine, subangular blocky structure; friable; strongly acid; gradual, smooth boundary; layer ranges from 8 to 20 inches in thickness.

C_3 or D 40 to 53 inches +, mottled strong-brown, black, and pale-yellow silty clay loam; massive; friable; strongly acid.

The surface layer ranges from very dark grayish brown to dark brown. The subsoil ranges from yellowish brown to dark brown in color, and from fine sandy loam to light silty clay loam in texture. The C_1 and C_2 layers are variable in color, texture, and structure. Small mica flakes are noticeable in some areas. The thickness of recent alluvium ranges from 34 inches to 10 or 12 feet. Some areas with a light silty clay loam to light fine sandy loam surface soil are included.

This soil has good tilth. Runoff is slow, permeability is moderate, and infiltration is medium to high. The capacity for holding available moisture is high. Natural fertility and the supply of organic matter are high. The root zone is thick. The soil responds to management and is suited to a fairly wide range of crops. It is well suited to intensive use, but flooding is a hazard. Flooding generally occurs in periods of prolonged rainfall, normally late in winter or early in spring.

Most of the soil has been used for corn. About 58 percent of the acreage is now in cultivation; the rest is forested, pastured, and idle. Capability unit IIw-1.

Purdy Series

The Purdy series consists of poorly drained, strongly acid soils on the lower parts of stream terraces. The soils occur in small areas throughout the county. They have developed from old general alluvium that has washed from soils derived mainly from sandstone and shale and to a lesser extent from limestone and other material. The surface soil is commonly mottled, very dark gray to dark grayish-brown silt loam. The subsoil is highly mottled, light brownish gray fine sandy clay. Concretions, up to one-fourth inch in diameter, are commonly on and in the soil.

In most places the Purdy soils are associated with the Nolichucky, Holston, Monongahela, and Tyler soils, and in a few places, with the Altavista and Masada soils. They are not so well drained as the associated soils, and generally they have a grayer, thinner solum and are more mottled.

The Purdy soils need drainage for pasture or timber production. About 57 percent of the acreage is in forest, consisting mainly of gum, water oak, maple, poplar, and ash.

A typical profile of a Purdy soil is given in the mapping unit Purdy silt loam, 0 to 2 percent slopes.

Purdy silt loam, 0 to 2 percent slopes (PuA).—This is the only Purdy soil mapped in the county.

A profile of this soil from a moist, wooded site in the SW¼SE¼ sec. 1, T. 15 S., R. 5 E., 1 mile west of Ragan Chapel, is described as follows:

A_0 ½ to 0 inch, partly decomposed leaves, twigs, and grass.

A_1 0 to 4 inches, very dark gray (10YR 3/1) silt loam; weak fine, crumb structure; friable; fine roots abundant; strongly acid; gradual, smooth boundary; layer ranges from 0 to 6 inches in thickness.

A_2 4 to 6 inches, grayish-brown (2.5Y 5/2) to light brownish-gray (2.5Y 6/2) very fine sandy loam or loam; common, medium, distinct mottles of light olive brown and dark grayish brown; weak, fine, crumb structure; friable; fine roots abundant; strongly acid; diffuse, wavy boundary; layer ranges from 2 to 6 inches in thickness.

B_1 6 to 18 inches, light brownish-gray (2.5Y 6/2) very fine sandy clay loam; many, medium, prominent mottles of light olive brown and dark grayish brown; weak, fine, crumb to subangular blocky structure; friable; small concretions; strongly acid; gradual, irregular boundary; layer ranges from 8 to 12 inches in thickness.

B_2 18 to 30 inches, light brownish-gray (2.5Y 6/2) fine sandy clay; many, medium, prominent mottles of light olive brown and dark grayish brown; weak, medium, subangular blocky structure; firm; few concretions; strongly acid; gradual, irregular boundary; layer ranges from 8 to 18 inches in thickness.

D 30 inches +, light-gray (5Y 7/1) sand and clay; many, medium, prominent mottles of light olive brown and dark grayish brown; weak, fine, subangular blocky or massive structure; very firm; strongly acid.

The surface soil ranges from very dark gray to grayish brown in color. The subsoil ranges from light brownish gray to light gray in color and from light fine sandy clay loam to clay in texture. Size and color of mottles are variable. A fragipan or claypan is at depths of 10 to 18 inches in most places. Some areas having a fine sandy loam surface soil are included.

Purdy silt loam, 0 to 2 percent slopes, has fair to good tilth. Runoff is slow to ponded, and infiltration is slow. Internal drainage is very slow. Permeability is slow, and the capacity for available moisture is low to very low. Natural fertility is very low. The soil responds only fairly well to management, and it is suited to a narrow range of crops. Poor drainage severely limits the choice of plants.

About 50 percent of the soil has been used, mainly for corn and hay. About 11 percent of the acreage is now in cultivation, and 15 percent is in pasture; the rest is forested or idle. Capability unit IVw-1.

Rarden Series

The Rarden series consists of moderately well drained, strongly acid to very strongly acid soils. These soils generally occur in large areas on wide shale ridges having slopes of 2 to 10 percent. Two extensive areas are in the vicinity of Peeks Hill and Sulphur Springs. They have developed from the residuum of shale and fine-grained, platy sandstone or limestone. In eroded areas, the surface soil is brown silt loam. The subsoil is yellowish-red clay or silty clay mottled with strong brown. Concretions and fragments of sandstone, up to one-half inch in diameter, are commonly on and in the soil.

The Rarden soils are associated with the Montevallo, Lehew, Conasauga, and Enders soils. Rarden soils are not so well drained, but they are deeper and have better developed B horizons than the Lehew and Montevallo soils. They are redder and more strongly acid than the Conasauga soils. The Rarden soils are less deep and less productive and have a more plastic subsoil than the Enders soils.

These soils are suited to a fairly wide range of crops. Sericea lespedeza is especially well suited. About 47 percent of the acreage is in forest consisting mainly of pine, oak, hickory, and gum.

A typical profile of Rarden soil is given in the mapping unit Rarden silt loam, shallow, 6 to 10 percent slopes, eroded.

Rarden gravelly loam, shallow, 2 to 6 percent slopes, eroded (RaB2).—A thicker solum, slower runoff, and a gravelly loam surface soil distinguish this soil from Rarden silt loam, shallow, 6 to 10 percent slopes, eroded. Sandstone, quartz, or chert gravel, up to 2 inches in diameter, are on and in the soil. A few areas in forest have been slightly eroded. There are a few shallow gullies.

This soil has fair tilth, a low capacity for available moisture, and a moderate erosion hazard. It is fairly well suited to frequent cultivation. Yields are moderate.

Most of the soil has been used, mainly for cotton and corn. About 27 percent of the acreage is now in cultivation; the rest is forested, pastured, or idle. Capability unit IIIe-6.

Rarden gravelly loam, shallow, 6 to 10 percent slopes, eroded (RaC2).—The gravelly, coarser textured surface soil and slightly higher rate of infiltration distinguish this soil from Rarden silt loam, shallow, 6 to 10 percent slopes, eroded. Sandstone, quartz, or chert gravel, up to 3 inches in diameter, are on and in the soil. A few places have been slightly to severely eroded. Shallow gullies are common.

This soil has fair tilth. It has a low capacity for available moisture. It is fairly well suited to frequent cultivation, but runoff and erosion are hazards.

Most of the soil has been used, mainly for cotton and corn. About 77 percent of the acreage is now in forest; the rest is cultivated, pastured, or idle. Capability unit IIIe-6.

Rarden silt loam, shallow, 2 to 6 percent slopes, eroded (RdB2).—Milder slopes, thicker solum, and slower runoff distinguish this soil from Rarden silt loam, shallow, 6 to 10 percent slopes, eroded. There is less erosion on this soil. The surface soil is 2 to 6 inches thick. Erosion is slight in the few forested areas.

This soil has fair tilth. It has a low capacity for available moisture. It is fairly well suited to frequent cultivation. Erosion is a moderate hazard.

Most of the soil has been used for cotton and corn. About 34 percent of the acreage is now in cultivation; the rest is forested, pastured, or idle. Capability unit IIIe 6.

Rarden silt loam, shallow, 6 to 10 percent slopes, eroded (RdC2).—This soil is on uplands.

A profile from a moist, second-growth site in trees in the SW¼SE¼ sec. 26, T. 14 S., R. 6 E., 1 mile north of Middleton Church, is described as follows:

A_p 0 to 2 inches, brown (10YR 5/3) silt loam; first one-half inch stained by organic matter; weak, fine, granular structure; very friable; fine roots abundant; strongly acid; abrupt, smooth boundary; layer ranges from 2 to 7 inches in thickness.

B_2 2 to 12 inches, yellowish-red (5YR 5/8) silty clay or clay; common, fine, distinct mottles of strong brown (7.5YR 5/8); strong, medium, subangular blocky and angular blocky structure; firm; few roots; prominent clay films; strongly acid; gradual, wavy boundary, layer ranges from 6 to 16 inches in thickness.

B_3 12 to 14 inches, mottled yellowish-red (5YR 5/8), strong-brown (7.5YR 5/8), and yellowish-brown (10YR 5/8) silty clay; strong, medium, subangular blocky structure; firm to slightly plastic; very strongly acid; gradual, wavy boundary; layer ranges from 0 to 3 inches in thickness.

C 14 to 44 inches, shaly clay or partly weathered shale; mottles of yellowish red (5YR 5/8), strong brown (7.5YR 5/8), and very pale brown to yellow (10YR 7/4–7/6); massive; firm to very firm; very strongly acid; gradual, wavy boundary; layer ranges from 8 to 30 inches in thickness.

D_r 44 inches +, dark-brown (10YR 4/3) or dark-gray (10YR 4/1) to black (N 2/) shale and sandstone; massive or platy structure; very strongly acid.

The surface soil ranges from brown and dark brown to yellowish brown in color. The subsoil ranges from yellowish red to strong brown in color and from silty clay or clay to silty clay loam in texture. The size and intensity of the mottles in this layer are variable. The C horizon is at depths ranging from 8 to 26 inches. A few severely eroded places are included. In these the 2- to 4-inch plow layer is a yellowish-red to dark-brown silty clay loam. There are a few shallow gullies. Some areas having a shaly loam surface soil are included.

This soil has fair tilth. Runoff and infiltration are medium. Permeability is slow; internal drainage is medium to slow. The capacity for available moisture is low. Fertility and the content of organic matter are low. Except in severely eroded places, the response to management is fair. The soil is suited to a fairly wide range of crops. It is fairly well suited to frequent cultivation. Erosion is a hazard.

Most of the soil has been used, mainly for cotton, corn, and hay. About 54 percent of the acreage is now in forest; the rest is cultivated, pastured, and idle. Capability unit IIIe–6.

Rarden silty clay loam, shallow, 2 to 6 percent slopes, severely eroded (ReB3).—This soil differs from Rarden silt loam, shallow, 6 to 10 percent slopes, eroded, in having milder slopes, more erosion, and a thinner solum. Runoff is higher. Erosion has removed all or nearly all of the original brown silt loam surface soil. The 2- to 4-inch plow layer is now a yellowish-red or dark-brown silty clay loam. There are a few shallow gullies.

This soil has poor tilth. It puddles easily when wet and forms hard clods if tilled when too wet. A stand of crops is hard to obtain because the soil crusts. The capacity for available moisture is low. Erosion is a serious hazard. Because of these unfavorable characteristics, this soil is poorly suited to cultivated crops. It is, however, fairly well suited to sericea lespedeza, grasses, and pine trees.

Most of this soil has been used, mainly for cotton, corn, and hay. About 21 percent of the acreage is now in cultivation; the rest is forested, pastured, or idle. Capability unit IVe–3.

Rarden silty clay loam, shallow, 6 to 10 percent slopes, severely eroded (ReC3).—More runoff, a thinner solum, poorer tilth, and severe erosion distinguish this soil from the Rarden silt loam, shallow, 6 to 10 percent slopes, eroded. Erosion has removed all of the original brown silt loam surface soil. The 2- to 4-inch plow layer is now a yellowish-red to dark-brown silty clay loam. Shallow gullies are common.

This soil has poor tilth. It puddles easily when wet, and it forms hard clods if cultivated when too wet. A stand of crops is hard to obtain because the soil crusts. The soil responds poorly to management. Erosion is a serious hazard. Because of these unfavorable characteristics, the soil is poorly suited to tillage. It is, however, suited to sericea lespedeza, grasses, and pine trees.

Most of the soil has been used, mainly for corn, cotton, and hay. About 16 percent of the acreage is now cultivated; the rest is wooded, pastured, or idle. Capability unit IVe–3.

Rarden-Montevallo complex, 2 to 10 percent slopes, eroded (RmC2).—This mapping unit consists of Rarden and Montevallo soils that occur in such an intricate association that it is not practical to map them separately. They are therefore mapped as a complex. This complex of soils is fairly extensive on the smooth ridges southwest of Oak Grove Church.

These soils have poor tilth and a low capacity for available moisture. They are poorly suited to tillage but can be used for sericea lespedeza and pine trees. Erosion is a serious problem.

Most of the soils in this complex have been used, mainly for cotton and corn. About 59 percent of the acreage is now in forest; the rest is cultivated, pastured, or idle. Capability unit IVe–3.

Robertsville Series

The Robertsville series consists of poorly drained, strongly acid to very strongly acid soils with a fragipan. These soils occur in small areas on stream terraces throughout the county. They have developed in old general alluvium that has washed from soils underlain by limestone, cherty limestone, and shale. The surface soil generally is dark grayish-brown to very dark grayish-brown silt loam. The subsoil is light brownish-gray to light-gray silty clay loam. A compact layer (fragipan) is at depths of 12 to 27 inches.

The Robertsville soils are adjacent to the Cumberland, Etowah, Captina, and Taft soils. They differ from the Cumberland and Etowah soils in having a fragipan and in being less red and more poorly drained. They are more poorly drained and more mottled throughout the profile than the moderately well drained Captina and somewhat poorly drained Taft soils.

About 39 percent of the acreage is in forest consisting of water oak, maple, gum, and several species of pine. Pastured, idle, and cultivated areas make up the rest, in about equal proportions.

A typical profile of a Robertsville soil is given in the mapping unit Robertsville silt loam, 0 to 2 percent slopes.

Robertsville silt loam, 0 to 2 percent slopes (RoA).—This soil is on flats or in depressed areas on stream terraces.

A profile from a moist, idle site in the SE¼NW¼ sec. 20, T. 16 S., R. 9 E., 6.75 miles east of Oxford, Ala., is described as follows:

A_p 0 to 3 inches, dark grayish-brown (2.5Y 4/2) silt loam; weak, fine, crumb structure; friable; fine roots abundant; very strongly acid; gradual, wavy boundary; layer ranges from 2 to 4 inches in thickness.

A_2 3 to 6 inches, dark grayish-brown (2.5Y 4/2) silt loam; a few, medium, faint mottles of grayish brown; weak, fine, crumb structure; friable; fine roots abundant; very strongly acid; gradual, wavy boundary; layer ranges from 2 to 6 inches in thickness.

A_3 6 to 8 inches, dark grayish-brown (2.5Y 4/2), heavy silt loam; common, medium, distinct mottles of grayish brown and brownish yellow; weak, fine, crumb structure; friable; few fine roots; small concretions; very strongly to strongly acid; clear, wavy boundary; layer ranges from 0 to 3 inches in thickness.

B_2 8 to 18 inches, light brownish-gray (10YR 6/2) silty clay loam; many, coarse, distinct mottles of reddish yellow; moderate, medium, subangular blocky and angular blocky structure; firm; small concretions; strongly acid; gradual, wavy boundary; layer ranges from 8 to 14 inches in thickness.

B_{3m} 18 to 50 inches +, olive-gray (5Y 5/2), heavy silty clay; many, medium, distinct mottles of dark yellowish brown and yellowish brown; moderate, medium, subangular blocky structure; very firm; strongly acid; layer ranges from 2 to 4 feet or more in thickness.

The surface soil ranges from dark grayish brown and dark brown to light brownish gray in color, and it is usually mottled. The subsoil ranges from light brownish gray to light gray; the color and number of mottles are variable. A few small areas have gravel on the surface. The fragipan is at depths ranging from 12 to 27 inches. It ranges in thickness from 8 to 18 inches and in compactness from weak to strong.

This soil has fair to good tilth. Runoff is very slow. Permeability and infiltration are slow. The capacity for available moisture is low. Natural fertility is very low, and the supply of organic matter is low. The reaction is very strongly acid to strongly acid throughout the profile. This soil responds only fairly well to management. It is poorly suited to intensive cultivation.

About 44 percent of this soil is in forest consisting of water-tolerant hardwoods. The rest is pastured, cultivated, or idle. Capability unit IVw–1.

Robertsville silt loam, overwashed, 0 to 2 percent slopes (RsA).—This soil is distinguished from Robertsville silt loam, 0 to 2 percent slopes, by the 6- to 14-inch layer of dark-brown to dark reddish-brown overwash. It is better drained, because of greater depth to the slowly permeable layer.

This soil has good tilth, and it responds well to management. It is suited to a slightly wider range of crops than Robertsville silt loam, 0 to 2 percent slopes, but it is only moderately suited to intensive use. Poor drainage is a hazard.

Most of this soil has been used, mainly for corn and hay. About 40 percent of the acreage is now cropped; the rest is wooded, pastured, or idle. Capability unit IIIw–2.

Sequatchie Series

The Sequatchie series consists of well-drained, strongly acid soils on low stream terraces. These soils are fairly extensive along the Coosa River, and they occur in small areas along many of the creeks in the county. They have developed in alluvium that has washed chiefly from soils underlain by sandstone. Some of the alluvium, however, was washed from soils underlain by limestone and mixtures of other material. The surface soil is dark grayish-brown fine sandy loam. The subsoil is dark-brown fine sandy clay loam.

In most places the Sequatchie soils are associated with the Nolichucky, Holston, and Monongahela soils; in a few places they are associated with Altavista and Masada soils. They are on lower areas and are not so red as the Nolichucky soils, but they are browner than the Holston soils. Sequatchie soils are deeper and better drained than the Monongahela soils, and they lack the fragipan characteristic of those soils. Generally, they are coarser textured throughout the profile than the silty, slick-feeling Altavista and Masada soils.

These productive soils are easily conserved, and they are suited to a wide range of crops. The present natural vegetation is mainly pine, oak, and hickory. About 68 percent of the acreage is in cultivation.

A typical profile of a Sequatchie soil is given in the mapping unit Sequatchie fine sandy loam, 0 to 2 percent slopes.

Sequatchie fine sandy loam, 0 to 2 percent slopes (ScA).—This friable soil is on low stream terraces.

A profile from a moist, cultivated site in NE¼SE¼ sec. 9, T. 16 S., R. 7 E., 0.8 mile northeast of the school at Eulaton, is described as follows:

A_p 0 to 9 inches, dark grayish-brown (10YR 4/2) fine sandy loam; weak, fine, granular structure; very friable; fine roots abundant; strongly acid; gradual, wavy boundary; layer ranges from 4 to 12 inches in thickness.

B_1 9 to 20 inches, brown (10YR 5/3), light fine sandy clay loam; weak, fine, granular and weak, fine, subangular blocky structure; friable; strongly acid; gradual, wavy boundary; layer ranges from 6 to 18 inches in thickness.

B_2 20 to 38 inches, dark-brown (7.5YR 4/4) fine sandy clay loam; weak, medium, subangular blocky structure; friable; strongly acid; clear, wavy boundary; layer ranges from 12 to 26 inches in thickness.

C 38 inches +, mottled brown, grayish-brown, and light brownish-gray fine sand, clay, and gravel; massive; firm; strongly acid.

The surface soil ranges from dark grayish brown to dark brown in color. The subsoil ranges from dark brown to yellowish brown in color and from fine sandy clay loam to light silty clay loam in texture. In some areas the lower part of this layer is mottled. Some areas having a gravelly fine sandy loam surface soil are included. Also included are a few places underlain by a firm silty clay subsoil. In places this soil is underlain by beds of gravel or sand.

Sequatchie fine sandy loam, 0 to 2 percent slopes, has very good tilth. Runoff is slow. Infiltration and internal drainage are medium. Permeability is moderate. The capacity for available moisture is moderate to high. The root zone is thick. Fertility and the supply of or-

ganic matter are low. The soil responds very well to management, and it is suited to a wide range of crops. It is well suited to intensive use; erosion is a slight hazard.

Most of this soil has been used, mainly for cotton and corn. About 62 percent of the acreage is now in cultivation; the rest is forested, pastured, or idle. Capability unit I-1.

Sequatchie fine sandy loam, 2 to 6 percent slopes (ScB).—Stronger slopes and slightly more runoff distinguish this soil from Sequatchie fine sandy loam, 0 to 2 percent slopes.

This soil has good tilth, and it responds to management. It is well suited to moderately intensive use. The root zone is thick.

Most of the soil has been used for cotton and corn. About 66 percent of the acreage is in cultivation; the rest is forested, pastured, or idle. Capability unit IIe-2.

Sequatchie fine sandy loam, 2 to 6 percent slopes, eroded (ScB2).—Stronger slopes, more runoff, and a thinner surface soil distinguish this soil from Sequatchie fine sandy loam, 0 to 2 percent slopes.

The soil has good tilth, and it responds to management. It is well suited to moderately intensive use. The root zone is thick. Runoff is a hazard.

Most of the soil has been used for corn and cotton. About 82 percent of the acreage is now in cultivation; the rest is forested, pastured, or idle. Capability unit IIe-2.

Sequatchie gravelly fine sandy loam, 2 to 6 percent slopes, eroded (SeB2).—This soil differs from Sequatchie fine sandy loam, 0 to 2 percent slopes, in having stronger slopes, a thinner surface soil, and rounded sandstone, quartz, and limestone gravel, as much as 2 inches in diameter, on and in the soil.

The soil has good tilth, and it responds to management. It is well suited to intensive use. The root zone is thick. Erosion is a hazard.

Most of this soil has been used for cotton and corn. About 61 percent of the acreage is now in cultivation; the rest is forested, pastured, or idle. Capability unit IIe-2.

Stendal Series

The Stendal series consists of strongly acid, somewhat poorly drained soils that are developing in general alluvium that washed chiefly from sandstone and shale. Some of the material originated from limestone. These soils occur on first bottoms along most streams in the northern part of the county and along Choccolocco Creek in the eastern part. The surface soil is a dark grayish-brown to dark-brown fine sandy loam, and the subsoil is a dark-brown, mottled fine sandy loam.

In most places the Stendal soils are associated with the Philo, the Pope, and Atkins soils. They differ from the Philo mainly in natural drainage. Both soils are flooded part of the time. Stendal soils are more mottled and more poorly drained than the Pope, and they are less mottled and better drained than the Atkins.

Stendal soils are suited to a fairly wide range of crops. The present natural vegetation is mainly water oak, ash, sycamore, maple, and pine.

In Calhoun County the Stendal soils are mapped with the Philo soils, as well as with the Atkins, as undifferentiated units. A typical profile of a Stendal soil is given in the mapping unit Philo and Stendal fine sandy loams, 0 to 2 percent slopes.

Stony Rough Land

Stony rough land, limestone (Sr).—This miscellaneous land type has so many boulders and fragments and outcrops of limestone on the surface that cultivation is not practical. The areas are rough and broken and do not have a uniform relief or composition. In places a small amount of clayey residuum fills the crevasses and spaces between rocks. This land type is at the bases of slopes or along their lower edge.

The tilth of this land type is poor. Runoff is high and infiltration is slow. The capacity for holding available moisture is generally low. Natural fertility is low to moderate.

Most of this mapping unit is in cutover forest consisting of scrub oak, hickory, cedar, pine, and shrubs. The cover on escarpments is sparse and stunted. Capability unit VIIe-2.

Stony rough land, sandstone (Ss).—This miscellaneous land type consists of rough mountainous areas with many outcrops of sandstone and quartzite bedrock, loose rock fragments, and scattered patches of sandy soil material. It also includes rock escarpments on higher parts of the Choccolocco and Coldwater Mountains where quartzite of the Weisner formation is common. Slopes generally are more than 25 percent.

The soil material is generally shallow over bedrock. Runoff is high, infiltration is slow, and the capacity for available moisture is low. This land type is low in natural fertility.

Practically all of the acreage is in cutover deciduous hardwoods and a few pines. The chief native vegetation is scrub oak, hickory, pine, and shrubs. The cover on escarpments is sparse and stunted. Most of this land type is difficult to reach, even for the harvest of timber. Capability unit VIIe-2.

Stony rough land, slate (St).—This miscellaneous land type consists of numerous outcrops and escarpments of slate interspersed with silty soil material and with fragments, stones, or boulders of slate and quartzite. It occupies the northern slopes of Talladega Mountain and most of the mountains that are south of Piedmont and east of Alabama Highway No. 9. Slopes are more than 25 percent.

Runoff is high, infiltration is slow, and the capacity for available moisture is low. Natural fertility is low. Tilth is poor.

Practically all of this land type is in cutover forest consisting chiefly of scrub oak, hickory, pine, and shrubs. Much of the area is difficult to reach, even for the harvest of timber. Capability unit VIIe-2.

Taft Series

The Taft series consists of somewhat poorly drained, medium to strongly acid soils with a fragipan. These soils occur in small areas on stream terraces throughout

the county. They have developed in old general alluvium that has washed from soils underlain by limestone, cherty limestone, and shale. The surface soil commonly is dark-brown silt loam. The subsoil is a light olive-brown to yellowish-brown, mottled silty clay loam. A compact layer (fragipan) is at depths ranging from 15 to 24 inches.

In most places these soils are adjacent to the Cumberland, Etowah, Captina, and Robertsville soils. The Taft soils differ from the Cumberland and the Etowah in having a fragipan and in being less red and more poorly drained. They are more mottled than the Captina soils and not so well drained. They are browner and better drained than the Robertsville soils.

Taft soils are not very productive. The suitability for crops is limited by the fragipan. About 44 percent of the acreage is in pasture, in forest, or is idle; the rest is in cultivation. The native vegetation is water oak, gum, poplar, ash, and pine.

Taft silt loam, 0 to 2 percent slopes (TaA).—This soil is on stream terraces. The fragipan impairs drainage.

A profile from a moist, cultivated site in the SW¼SW¼ sec. 27, T. 14 S., R. 7 E., 1 mile west of Alexandria, Ala., is described as follows:

A_p 0 to 6 inches, dark-brown (10YR 4/3) silt loam; weak, fine, crumb structure; friable; small concretions; fine roots abundant; strongly acid; gradual, smooth boundary; layer ranges from 4 to 6 inches in thickness.

A_2 6 to 8 inches, dark-brown (10YR 4/3) to brown (10YR 5/3) silt loam; a few, fine, faint mottles of light brownish gray; weak, fine, crumb structure; friable; small concretions and fine roots plentiful; strongly acid; clear, smooth boundary; layer ranges from 1 to 2 inches in thickness.

B_1 8 to 12 inches, light yellowish-brown (2.5Y 6/4) to brownish-yellow (10 YR 6/6) silty clay loam; common, medium, distinct mottles of strong brown and light brownish gray; weak, medium, subangular blocky structure; friable; small concretions; strongly acid; gradual, smooth boundary; layer ranges from 2 to 4 inches in thickness.

B_2 12 to 23 inches, light olive-brown (2.5Y 5/6) to yellowish-brown (10YR 5/6) silty clay loam; common, medium, distinct mottles of strong brown, light brownish gray, and light gray; weak, medium, subangular blocky structure; friable; small concretions; strongly acid; clear, smooth boundary; layer ranges from 8 to 12 inches in thickness.

B_{3m} 23 to 31 inches, mottled strong-brown (7.5YR 5/6), light brownish-gray (10YR 6/2), and light-gray (2.5Y 7/2) silt loam; numerous concretions; massive; firm or compact in place but friable when broken down; strongly acid; clear, smooth boundary; layer ranges from 4 to 14 inches in thickness.

D 31 to 50 inches +, mottled strong-brown (7.5YR 5/6), dark-brown (10YR 4/3), and light brownish-gray (10YR 6/2) silty clay; massive; slightly plastic; few small concretions; slightly alkaline; layer is 2 feet or more in thickness.

The surface soil ranges in color from very dark grayish brown and dark brown to light brownish gray. The subsoil ranges from yellowish brown to light brownish gray, but the color and number of mottles are variable. The fragipan is at depths ranging from 15 to 24 inches; it ranges from 4 to 14 inches in thickness and from weak to strong in compactness. Some areas have been overwashed with a dark-brown to reddish-brown loam or silty clay loam from higher lying soils. A few small areas having cherty silt loam surface soil are included.

Taft silt loam, 0 to 2 percent slopes, has good tilth. Runoff and permeability are slow, and infiltration is medium to slow. The capacity for available moisture is low. This soil has low natural fertility and a low supply of organic matter. It responds fairly well to management, and it is suited to moderately intensive use. Poor drainage is a hazard.

Most of the soil has been used, mainly for corn and hay. About 55 percent of the acreage is cropped; the rest is wooded, pastured, or idle. Capability unit IIIw 2.

Talladega Series

The Talladega series consists of well-drained, very strongly acid soils on uplands. These soils occur in small areas on the foothills of the Talladega Mountains in the eastern part of the county. They have developed from residuum of Talladega slate, mica schist, and phyllite. Where uneroded, these soils have a dark grayish-brown surface soil underlain by reddish-yellow to yellowish-red silty clay loam subsoil. Fragments of schist, as much as 8 inches in diameter, are on and in the soil.

In most places the Talladega soils are associated with Georgeville and Tate soils and with Stony rough land, slate. They are usually thinner, have less profile development, and have more rapid internal drainage than the Georgeville and Tate soils. They have more profile development, are more uniform in color, and occupy smoother topography than Stony rough land, slate. They are not so stony as this land type.

Permanent vegetation will control erosion on these shallow soils. About 84 percent of the acreage is in forest consisting mainly of oak, pine, and hickory.

Talladega soils, 10 to 40 percent slopes (TdE).—These shallow, well-drained soils are on steep slopes.

A profile from a moist, forested site in the SW½NW¼ sec. 19, T. 14 S., R. 10 E., 2.5 miles southeast of the church in Rabbittown, is described as follows:

A_{00} ½ to 0 inch, partly decayed forest litter.

A_1 0 to 3 inches, dark grayish-brown (10YR 4/2) loam; structureless to weak, fine, granular structure; very friable; numerous fine roots; very strongly acid; diffuse, irregular boundary; layer ranges from 0 to 3 inches in thickness.

A_2 3 to 7 inches, dark-brown (10YR 4/3) to brown (10YR 5/3) loam; structureless to weak, fine, granular structure; very friable; roots plentiful; very strongly acid; diffuse, irregular boundary; layer ranges from 3 to 8 inches in thickness.

B-C 7 to 20 inches, reddish-yellow (7.5YR 6/8) to yellowish-red (5YR 5/8) silty clay loam; weak, fine, granular to subangular blocky structure; very friable; small fragments of slate; very strongly acid; diffuse, irregular boundary; layer ranges from 8 to 18 inches in thickness.

D_r 20 inches +, yellowish-red, grading to dark-gray, Talladega slate or phyllite; very strongly acid.

The surface soil ranges from brown to dark grayish brown in color and from gravelly fine sandy loam or loam to silt loam in texture. The B-C horizon ranges from yellowish red to strong brown in color and from silty clay loam to silt loam in texture. The solum ranges in depth from 11 to 29 inches. There are some severely eroded places, and in these the plow layer is a brown or dark-brown, light silty clay loam.

This soil has good tilth. Runoff, permeability, and in-

ternal drainage are rapid. Infiltration is medium. The capacity for available moisture is low. Natural fertility and the supply of organic matter are low. The range of suitable crops is limited. These characteristics, together with low yields and the risk of erosion, make this soil unsuitable for cultivation.

About one-third of the soil has been used for cotton, corn, and hay. At present, about 84 percent of the acreage is in forest; the rest is cultivated, pastured, or idle. Capability unit VIIe-2.

Tate Series

The Tate series consists of well-drained, strongly acid to very strongly acid soils on fans and on foot slopes along the Talladega Mountains. These soils have developed from old local alluvium that has washed or sloughed from ridges and mountains of Talladega slate, mica schist, and phyllite. Where eroded, these soils have a brown to dark-brown silt loam surface soil and a yellowish-red, light silty clay loam subsoil. Fragments of slate and quartz, up to 3 inches in diameter, are commonly on and in the soil.

In many places, the Tate soils are associated with Talladega soils and with Stony rough land, slate. They are also associated with Georgeville soils on the adjacent upland. Tate soils have a deeper, better developed subsoil than the shallow, well-drained Talladega soils and Stony rough land, slate. They differ from the adjacent Georgeville soils in having been developed from alluvium rather than from residuum.

These soils can be conserved with moderate to special conservation practices. About 37 percent of the acreage is in forest consisting mainly of oak, hickory, gum, and pine.

A typical profile of the Tate series is given in the mapping unit Tate gravelly silt loam, 2 to 6 percent slopes, eroded.

Tate gravelly silt loam, 2 to 6 percent slopes, eroded (TeB2).—This friable soil has developed in local alluvium along the bases of mountains.

A profile of this soil under a moist, second-growth forest of loblolly pine in the NE¼SW¼ sec. 35, T. 15 S., R. 9 E., 0.8 mile north of the Iron City railroad station, is described as follows:

A_p 0 to 6 inches, brown (10YR 5/3) to dark-brown (7.5YR 4/4) gravelly silt loam; weak, fine, crumb structure; very friable; fine roots abundant; first inch stained by organic matter; very strongly acid; gradual, smooth boundary; layer ranges from 0 to 10 inches in thickness.

B_2 6 to 28 inches, yellowish-red (5YR 5/6-4/8), slaty, light silty clay loam; weak, fine, crumb and subangular blocky structure; friable; feels slick or soapy when rubbed between the fingers; strongly acid; gradual, wavy boundary; layer ranges from 15 to 30 inches in thickness.

B_3 28 to 52 inches, strong-brown (7.5YR 5/6), light silty clay loam; weak, fine, crumb and subangular blocky structure; friable; feels slick or soapy; strongly acid; gradual, wavy boundary; layer ranges from 10 to 30 inches in thickness.

D_r 52 inches +, yellowish-brown (10YR 5/6), partly weathered slate; strongly acid.

The surface soil ranges from brown and dark brown to dark gray. The subsoil ranges from yellowish red to yellowish brown in color, and from slaty, light silty clay loam to silty clay loam in texture. In some areas the subsoil is mottled with dark brown and light brownish gray at depths of 24 to 32 inches. The thickness of the local alluvium ranges from 2 to 10 feet or more. There are some severely eroded places, and in these the plow layer is a yellowish-red to dark-brown gravelly silty clay loam. A few small areas are free of gravel. Some areas having a gravelly silt loam to gravelly fine sandy loam surface soil are included.

This soil has good tilth. Runoff and internal drainage are medium. Infiltration is slow to medium; permeability is moderate. The capacity for available moisture is fair. The root zone is thick. Natural fertility and the supply of organic matter are low. Except in the severely eroded places, the response to management is good. This soil is suited to moderately intensive use and to a wide range of crops. Runoff is a hazard.

About 42 percent of the acreage is in cultivation; the rest is forested, pastured, or idle. Capability unit IIe-4.

Tate gravelly silt loam, 6 to 10 percent slopes, eroded (TeC2).—Stronger slopes, slightly more runoff, and a thinner solum distinguish this soil from Tate gravelly silt loam, 2 to 6 percent slopes, eroded. There are some severely eroded places and shallow gullies.

This soil has good tilth. It responds well to management and is suited to moderately intensive use. The capacity for available moisture is moderate. Erosion is a significant hazard.

Most of this soil has been used, mainly for cotton, corn, and hay. About 22 percent of the acreage is now in cultivation; the rest is forested, pastured, and idle. Capability unit IIIe-4.

Tate gravelly silty clay loam, 2 to 6 percent slopes, severely eroded (TgB3).—Erosion has removed all or nearly all of the original brown or dark-brown silt loam surface soil. The 3- to 6-inch plow layer is now a yellowish-red to dark-brown gravelly silty clay loam. There are a few shallow gullies. This soil has more rapid runoff than Tate gravelly silt loam, 2 to 6 percent slopes, eroded.

Tilth is poor. The soil bakes or forms clods on drying. Runoff is rapid. The soil is suited to moderately intensive use, but, because of slow infiltration, erosion is a serious hazard.

Most of the soil has been used, mainly for cotton and corn. About 59 percent is now in cultivation; the rest is forested, pastured, and idle. Capability unit IIIe-4.

Tate gravelly silty clay loam, 6 to 10 percent slopes, severely eroded (TgC3).—Stronger slopes, more runoff, and a finer textured plow layer distinguish this soil from Tate gravelly silt loam, 2 to 6 percent slopes, eroded. In addition, this soil has poorer tilth. Erosion has removed all or nearly all of the original surface soil. The 3- to 6-inch plow layer is now a yellowish-red or dark-brown gravelly silty clay loam that is mainly subsoil material. Shallow gullies are common; in some areas a few deep ones have formed.

This soil has poor tilth. It puddles easily when wet, and it forms clods on drying. It has a low capacity for available moisture and is poorly suited to cultivation. Erosion is a serious hazard.

Most of the soil has been used, mainly for cotton, corn, and hay. About 18 percent of the acreage is now in cultivation; the rest is forested, pastured, or idle. Capability unit IVe-2.

Terrace Escarpments

Terrace escarpments (Tr).—This miscellaneous land type is on short, abrupt, steep slopes. It is fairly extensive in the southwestern part of the county near Mount Olive Church. A mantle of stream-terrace material, ranging from 10 to 30 inches in thickness, overlies residuum of varied origin.

The surface layer normally ranges from dark grayish brown or grayish brown to reddish brown in color and from gravelly loamy fine sand to clay loam in texture. The subsoil material also varies in color, texture, thickness, and degree of development.

This land type has poor tilth. Runoff is moderate to rapid, and infiltration is slow to medium. The permeability ranges from slow to rapid, and the capacity for available moisture is low. Natural fertility and the supply of organic matter are generally low.

About three-fourths of the acreage is in forest consisting of oak, hickory, gum, and pine. Most of the rest is idle. Capability unit VIIe 2.

Tyler Series

The Tyler series consists of strongly acid, somewhat poorly drained soils on low stream terraces. These soils occupy small areas throughout the county. They have developed in old general alluvium that washed from soils derived primarily from sandstone and shale and to a lesser extent from limestone and other material. The surface soil commonly is a grayish-brown silt loam. The subsoil is a light yellowish-brown, mottled fine sandy clay loam. A compact layer (fragipan) is at depths ranging from 14 to 24 inches. Concretions, as much as one-fourth inch in diameter, are commonly on and in the soil.

In most places Tyler soils are associated with the Nolichucky, Holston, Monongahela, and Purdy soils and in a few places with the Altavista and Masada soils. The Tyler soils have a fragipan, and they normally have a thinner solum than the better drained Nolichucky, Holston, Altavista, and Masada soils. They are not so well drained as the Monongahela soils, and they have a subsoil that is more mottled. Tyler soils are better drained and not so mottled as the poorly drained Purdy soils.

Tyler soils are easily conserved. They are not productive and are suited to only a narrow range of crops. About 43 percent of the acreage is in cultivation. The natural vegetation is mainly oak, hickory, gum, and pine.

Tyler silt loam, 0 to 2 percent slopes (TyA).—This soil is on stream terraces. Drainage is retarded by a fragipan.

A profile of this soil in a moist, cultivated area in the SE¼NW¼ sec. 13, T. 13 S., R. 7 E., 1 mile south of the school in Websters Chapel, is described as follows:

A_p 0 to 6 inches, grayish-brown (2.5Y 5/2) silt loam; weak, fine, crumb structure; friable; strongly acid; gradual, smooth boundary; layer ranges from 3 to 7 inches in thickness.

B_1 6 to 10 inches, light yellowish-brown (2.5Y 6/4), light fine sandy clay loam; weak, fine, subangular blocky structure; friable; strongly acid; gradual, wavy boundary; layer ranges from 3 to 5 inches in thickness.

B_2 10 to 20 inches, light yellowish-brown (2.5Y 6/4), fine sandy clay loam; common, medium, distinct mottles of light gray, grayish brown, and dark brown; weak, medium, subangular blocky structure; friable; small concretions common; strongly acid; clear, wavy boundary; layer ranges from 8 to 12 inches in thickness.

B_{3m} 20 to 40 inches +, pale-yellow (2.5Y 7/4), light fine sandy clay loam; many, medium, prominent mottles of light gray, dark brown, and grayish brown; massive; firm or compact in place, friable when dug out; numerous concretions; strongly acid.

The color of the surface soil ranges from grayish brown and light brownish gray to very dark grayish brown. The subsoil ranges from light yellowish brown to yellowish brown. It has mottles that vary in abundance, size, and color. The texture of the subsoil ranges from fine sandy clay loam to light silty clay loam. The fragipan is at depths ranging from 14 to 24 inches, and it varies in color, hardness, and thickness. Brown silt loam that has washed from surrounding soils covers small areas of this soil, and it ranges from 2 to 5 inches in thickness. Some areas having a loam or fine sandy loam surface soil are included.

This soil has good tilth. Runoff and permeability are slow. Natural drainage is somewhat poor; internal drainage is slow to very slow. Infiltration is medium. The capacity for available moisture is low. Natural fertility and the supply of organic matter are low. This soil responds fairly well to management. It is limited in productivity and in range of suitable crops. It can be used moderately intensively, but poor drainage is a hazard.

Nearly all the soil has been used, mainly for corn and hay. About 43 percent of the acreage is now in cultivation; the rest is forested, pastured, or idle. Capability unit IIIw-2.

Formation and Classification of Soils

The rock formations, the soils that have developed from them, and the processes of soil formation are described in this section. In addition, the soils of Calhoun County are classified by higher categories, and the morphological characteristics of soils in the classes represented in each category are explained.

Factors of Soil Formation

Soil is the product of soil-forming processes acting on materials deposited or accumulated by geologic agencies. The characteristics of the soil at any given point are determined by (1) the composition of the parent material; (2) the climate under which the soil material has accumulated and existed since accumulation; (3) the plant and animal life on and in the soil; (4) the relief, or lay of the land; and (5) the length of time the forces of soil development have acted on the soil material. Climate is very important in soil development, as it affects temperature and moisture conditions within the soil.

Climate and vegetation are the active factors of soil genesis. They act on the parent material and change it into a body having definite soil characteristics. The effects of climate and vegetation on the parent material are conditioned by relief, which influences drainage, the quantity of water that percolates through the soil, the rate of erosion, and the kind of vegetation that grows on the soil. The nature of the parent material also affects the kind of profile that can be formed. Time is needed for changing the parent material into soil. Usually a long interval is required for the development of distinct soil horizons.

The factors of soil genesis are so closely associated in their effects on the soil that few generalizations can be made regarding the effects of any one factor alone. The interrelationship of the factors is so complex that many of the processes that take place in the development of the soils are not known.

Parent material

The parent materials of soils of Calhoun County may be grouped into two classes: (1) Those that formed in place from the weathering of rock; and (2) those that have been transported by water or gravity and laid down as unconsolidated deposits of clay, silt, sand, and large fragments of rock. Material of the first class is usually related directly to the underlying rock, and that of the second class is related to the soils or rocks at some other location.

RESIDUAL PARENT MATERIAL

In Calhoun County the residual parent materials have weathered from metamorphic and sedimentary rocks. The properties of these rocks are strongly reflected in many of the characteristics of the soils that have developed from them. Geologically, the rocks are very old; they range from Precambrian to Mississippian. Table 7 shows the geological formations and the soil series that have developed from them.

The Talladega, Choccolocco, Coldwater, Duggar, Greens Creek, and Colvin Mountains in the county consist of excessively drained, steep to very steep, shallow soils. Talladega Mountain is made up of a great variety of completely crumpled, metamorphic rocks, locally called soapstone. Those rocks are mainly slate or sericitic phyllite—which is intermediate between slate and schist (*1*). Minor constituents, interbedded in the phyllite, are conglomerate, sandstone, limestone, dolomite, chert, and quartz schist. The slate is very dark gray or bluish gray to gray, but it becomes light gray, yellow, yellowish red, or red when weathered. Soils of the Talladega and Georgeville series have formed from this material. These soils occur at elevations ranging from 800 or 900 feet to about 1,800 feet above sea level.

The Choccolocco, Coldwater, and Duggar Mountains were formed by the upheaval of Weisner quartzite. This gray or grayish-blue formation is made up of hard quartzite and conglomerate that are interstratified with softer shale. The shallow, stony soils on these mountains are included in the Muskingum series and in Stony rough land. They occur at elevations ranging from about 800 to 2,100 feet or more above sea level.

The Greens Creek and Colvin Mountains are approximately 800 to 1,200 feet above sea level. These mountains are mainly rocks of the Red Mountain formation, which in the basal part is hard, gray sandstone, about 50 feet thick, and in the upper part is shale with interbedded thin layers of ferruginous brown sandstone. Included in these mountains are small bodies of the Parkwood and Pottsville formations. The Red Mountain formation is closely associated with the overlying Fort Payne chert, and both are highly resistant to weathering. Regoliths overlying the Red Mountain, Parkwood, and Pottsville formations are generally shallow and have given rise mainly to Muskingum soils.

The intermediate ridges, called shale ridges, are made up of interbedded, fine-grained sandstone and shale, chiefly of the Rome formation. The color of the sand-

TABLE 7.—*Geological formations and the soil series that have developed from them*

Geologic period	Formation	Kind of rock	Soil series and miscellaneous land type
Carboniferous (Pennsylvanian)	Pottsville	Acid sandstone and shale	Linker.
Carboniferous (Mississippian)	Parkwood	Acid sandstone and shale	Muskingum.
Carboniferous (Mississippian)	Floyd	Greenish or dark-gray shale	Rarden, Montevallo, and Enders.
Carboniferous (Mississippian)	Fort Payne	Chert	Fullerton and Clarksville.
Silurian	Red Mountain	Acid sandstone; some shale	Muskingum.
Ordovician	Chickamauga and Little Oak	Limestone	Dewey and Decatur.
	Athens	Shale	Rarden and Montevallo.
	Beekmantown	Limestone	Decatur and Dewey.
Ordovician or Cambrian	Chepultepec and Copper Ridge	Dolomite and cherty dolomite	Fullerton and Clarksville.
Cambrian	Conasauga	Limestone and dolomite	Dewey and Decatur.
		Shale	Rarden and Conasauga.
	Rome	Interbedded acid fine-grained sandstone and shale.	Montevallo, Rarden, and Lehew.
	Shady	Dolomite	Decatur and Dewey.
	Weisner	Quartzite, conglomerate, and some shale.	Muskingum and Stony rough land.
Algonkian to Carboniferous	Talladega	Slate	Talladega and Georgeville.

stone ranges from grayish to dark reddish brown and red or reddish. The shale is reddish or purplish to green and yellowish or brownish, and it includes silt or very fine grained, sandy material. Some of the soils that have developed from the Rome formation belong to the Montevallo, Rarden, and Lehew series. The intermediate ridges have rolling to very steep slopes and elevations ranging from about 700 to 1,000 feet. Small areas of the Red Mountain formation occur in some of the higher intermediate ridges.

The lower ridges consist of Floyd shale interbedded with sandstone and fewer thin layers of limestone or cherty limestone. The Floyd shale is greenish or very dark gray. Small flakes of it have wrinkled and greasy-looking surfaces.

The cherty limestone ridges, or the so-called chert ridges, are composed of the Copper Ridge dolomite and Chepultepec dolomite, Fort Payne chert, and small areas of other rocks.

The Copper Ridge dolomite is generally thin bedded, light gray, fine or coarse grained, and presumably siliceous. However, the formation as a whole is genuine dolomite. The most obvious characteristic feature of the formation is the chert, which is developed superficially when the dolomite weathers. The Chepultepec dolomite is light-gray to dark-bluish, thick-bedded limestone with layers containing fossil gastropods. Some areas of it are distinguished by a soft, mealy, cavernous chert that looks like worm-eaten wood. Chepultepec dolomite generally overlies the Conasauga formation.

The Fort Payne formation consists of solid chert, which, in places, has weathered to depths of 20 to 50 feet or more. It is generally porous and stony. The color is gray, with splotches of black or brown manganese and iron stains. Normally, the chert has many fracture planes. Weathering has broken the chert along these planes into many fine pieces. The lower part of the Fort Payne formation is dark flint, which weathers into a soft, brownish, chalky rock. This weathered material is used extensively for surfacing roads. Well drained to moderately well drained soils are on the chert ridges at elevations ranging from 600 to 800 feet. Slopes are undulating to steep, and runoff is medium to rapid. There are many drainageways.

The valleys are made up of the following formations: Conasauga limestone, Shady dolomite, Little Oak limestone, and Athens shale.

The Conasauga formation consists of limestone, dolomite, and shale in various proportions. The limestone is dark bluish to blue and fine grained. It is mainly lightly argillaceous and thin bedded. The shale is greenish and contains fossils. The Shady dolomite is gray, bluish gray, or pale yellowish gray and is fine grained. It is thick bedded. It takes a good polish and would rank as marble. Shady dolomite weathers to a red clay several feet thick. In many places the clay is covered by local alluvium from the Weisner formation. The Little Oak (late Chazy) is generally a thick-bedded, dark, coarsely crystalline limestone that in places contains nodules of chert. It is very argillaceous at the top. The Athens is a black, fissile shale but contains layers of impure, dark to black limestone and a few, thin layers of gray, compact limestone. It is calcareous and may be mistaken for argillaceous limestone.

All the formations in the valleys are gently sloping. A large percentage of their area is covered with valley-fill material transported by the once larger streams. As a rule, soils that have developed in the valley-fill material are deep, well drained, and gently sloping. They occur at elevations ranging from about 485 to 800 feet above sea level.

TRANSPORTED PARENT MATERIAL

Considerably more soil series in this county have developed from transported material than from residual material. Although most of the transported material washed from uplands underlain by rocks described in the section Residual Parent Material, some of it was brought in by the Coosa River from soils underlain chiefly by sandstone and shale. The soils within each group are somewhat different, depending on the composition of the upland, the amount of mixing of the materials, the age, and the drainage conditions. The characteristics of the soils reflect these differences.

Some of the soils have developed from general alluvium that washed mainly from weathered limestone and dolomite containing some shale. They are the Cumberland, Etowah, Captina, Taft, and Robertsville soils on stream terraces; the much younger Lindside, Newark, Lee, Lobelville, Dunning, and Melvin soils on first bottoms; the Minvale and the Landisburg soils on foot slopes in old local alluvium; and the local alluvium phases of the Huntington, Lindside, Lobelville, and Lee soils.

General alluvium that washed mainly from weathered sandstone and shale is the material in which the Nolichucky, Holston, Sequatchie, Monongahela, Tyler, and Purdy soils have formed. All of these occupy stream terraces. The Anniston, Allen, Jefferson, Cane, and Locust soils have developed in old local alluvium or in colluvium of the same origin. Other soils forming in this type of general alluvium are the relatively young Pope, Philo, Stendal, and Atkins soils on first bottoms. The local alluvium phases of the Philo, Stendal, and Atkins soils are developing in recently deposited local alluvial or in colluvial material of the same origin.

General alluvium that washed from soils underlain by Talladega slate is the material in which the Altavista and Masada soils have formed on stream terraces. The Tate soils have formed in old local alluvium or in colluvium of the same material.

Climate

The climate of Calhoun County is of the humid, warm-temperate, continental type characteristic of the southern United States. Temperature and precipitation data are shown in table 8.

The summers normally are long, the days are moderately hot, and the nights are fairly cool. Most winters are mild and pleasant. Temperatures at night frequently fall below freezing, and occasionally they stay below freezing for 1 to 3 days.

Precipitation is generally well distributed throughout the year. There is a little more rainfall in December, January, February, and March than in other parts of the year. October and September are the driest months.

Snow is not common. It normally melts quickly, especially in the limestone valleys. Sometimes snow stays on the ground for 8 to 10 days, especially on northern slopes in the higher mountains.

Moist soil and warm summer temperature increase the speed of chemical reactions and the weathering of parent material. The soil is frozen for short periods and only to shallow depths; consequently, weathering is intensified and the translocation of material is accelerated. As a rule, the soils in warm, humid climates are strongly weathered, leached, acid, and low in fertility.

Climate in Calhoun County is fairly uniform, and therefore does not account for local differences in soils. It has been an active factor in soil formation. The average growing season is 226 days. The average date of the last killing frost in spring is March 26, and that of the first killing frost in autumn is November 7. The latest killing frost recorded was on April 25, 1910, and the earliest killing frost was on October 11, 1906.

TABLE 8.—*Temperature and precipitation at Anniston Station, Calhoun County, Ala.*

[Elevation, 599 feet]

Month	Temperature [1]			Precipitation [2]			
	Average	Absolute maximum	Absolute minimum	Average	Driest year (1931)	Wettest year (1929)	Average snowfall
	°F.	°F.	°F.	Inches	Inches	Inches	Inches
December	45. 7	80	6	5. 30	10. 96	2. 90	0. 2
January	45. 9	80	3	5. 02	2. 49	4. 96	. 9
February	47. 3	82	2	5. 13	2. 81	7. 15	. 2
Winter	46. 3	82	−3	15. 45	16. 26	15. 01	1. 3
March	54. 1	90	12	6. 31	3. 31	12. 58	. 3
April	61. 9	93	26	4. 75	2. 69	6. 13	. 1
May	69. 4	97	34	3. 78	3. 29	6. 25	(3)
Spring	61. 8	97	12	14. 84	9. 29	24. 96	. 4
June	77. 0	104	47	4. 03	2. 03	3. 96	(3)
July	78. 8	105	51	5. 34	5. 10	7. 17	(3)
August	78. 3	103	50	4. 31	2. 81	. 72	(3)
Summer	78. 0	105	47	13. 68	9. 94	11. 85	(3)
September	74. 0	105	38	3. 26	. 79	6. 00	(3)
October	63. 0	94	22	2. 66	. 46	3. 02	(3)
November	52. 2	84	5	3. 50	2. 89	11. 71	. 1
Fall	63. 1	105	5	9. 42	4. 14	20. 73	. 1
Year	62. 3	105	−3	53. 39	39. 63	72. 55	1. 8

[1] Average temperature based on a 47-year record, through 1952; highest and lowest temperatures on a 47-year record, through 1952.
[2] Average precipitation based on a 47-year record, through 1952; wettest and driest years based on a 46-year record, in the period 1906–1952; snowfall based on a 47-year record, through 1952.
[3] Trace.

Plant and animal life

Trees, shrubs, grasses and other herbaceous plants, micro-organisms, earthworms, and various other forms of plant and animal life live on and in the soil and are active agencies in the soil-forming processes. The kinds of plants and animals that live on and in the soil are determined by environmental factors, which include climate, parent material, relief, age of the soil, and organisms.

The trees common to this county obtain plant nutrients moderately deep in the soil. Most of them shed their leaves annually. The plant-nutrient content of leaves differs considerably among species; the leaves of deciduous trees and plants, however, are generally higher in phosphorus and bases than the needles of coniferous trees. Since deciduous trees predominate, the upper part of the soil receives plant nutrients from the lower part in the form of leaves, to counteract in part the depleting action of percolating waters.

Considerable organic material is added to the soil through dead leaves, roots, twigs, and entire plants. Most of it is added to the A horizon, where it is acted upon by micro-organisms, earthworms, and other forms of life and by direct chemical reactions. In Calhoun County, plant material decomposes fairly rapidly because of favorable temperature and moisture, favorable character of the organic material itself, and presumably favorable micropopulation of the soil. Organic material does not accumulate on well-drained sites in this climate to the extent that it does in cooler climates under similar drainage.

Little is known of the micro-organisms, earthworms, and other population in the soils of the county. It is probable that their importance is no less than that of the higher plants.

Relief

Rock formations in the county have also contributed to differences in soils through their influence on relief. The rocks of this county are parts of old formations that are folded and faulted. Relief is probably mainly the result of geologic weathering and erosion of rock formations. The higher lands are capped by more resistant rocks, whereas the valleys are underlain by the less resistant rocks (*5*).

The internal drainage of the nearly level to gently sloping soils in the limestone areas is exceptionally good. In most areas good subterranean drainage is provided through caverns and crevices in rocks. This underground drainage partly counteracts the usual effects of gentle relief on drainage. As a result, the well drained, well-developed soils formed from residual material have local differences caused mainly by parent rock. These soils are subject to similar influences of climate and vegetation in this county.

Time

Some soil material that has been in place for only a short time has not been influenced long enough by climate and vegetation to have developed well-defined and genetically related profile horizons. Most soils on the first bottoms are composed of such material. Soil material on steep slopes and on rough broken land is constantly renewed and removed by erosion. Soils forming in this material have not developed genetically related horizons. These two broad groups comprise the younger soils of the county.

Soils that have been in place for a long time and have approached equilibrium with their environment are considered mature or old. Some nearly level, well-drained soils that are only slightly eroded have more strongly marked profile characteristics than well-drained, well-developed soils on sloping uplands. These soils are very old. The soils of Calhoun County range from very young to very old, but they are mainly moderately young to very young.

Classification of Soils by Higher Categories

Soils are classified in categories that are progressively more inclusive. The lowest categories commonly used in the field are series, type, and phase. The higher categories of classification, called great soil groups and

TABLE 9.—*Soil series classified by order and great soil group*

ZONAL

Great soil group and soil series	Topographic position	Parent material
Red-Yellow Podzolic soils:		
Central concept:		
Red members:		
Allen	Foot slopes	Old local alluvium mainly from sandstone; some shale and limestone
Enders	Upland	Residuum from shale and sandstone
Fullerton	Upland	Residuum from cherty limestone
Georgeville	Upland	Residuum from Talladega slate, schist, and phyllite
Linker	Upland	Residuum from sandstone and some shale
Masada [3]	Stream terrace	Old mixed general alluvium from uplands underlain by Talladega slate, schist, and phyllite.
Minvale	Foot slopes	Old local alluvium mainly from cherty limestone
Nolichucky	Stream terrace	Old mixed general alluvium from uplands underlain by sandstone and shale
Tate [3]	Foot slopes	Old local alluvium mainly from Talladega slate, schist, and phyllite
Yellow members:		
Altavista	Stream terrace	Old mixed general alluvium from uplands underlain by Talladega slate, schist, and phyllite.
Clarksville	Upland	Residuum from cherty limestone
Holston	Stream terrace	Old mixed general alluvium from uplands underlain by sandstone, shale, and some limestone.
Jefferson	Foot slopes and fans	Old local alluvium mainly from sandstone; some shale and limestone
Grading to Reddish-Brown Lateritic soils:		
Dewey	Upland	Residuum from high-grade limestone; chert in places
Etowah	Stream terrace	Old mixed general alluvium from uplands underlain by limestone; some shale and sandstone.
Grading to Planosols with fragipan:		
Cane	Foot slopes	Old local alluvium mainly from interbedded sandstone, shale, and cherty limestone.
Captina	Stream terrace	Old mixed general alluvium from uplands underlain by limestone; some sandstone and shale in places.
Landisburg	Foot slopes and fans	Old local alluvium mainly from cherty limestone
Locust	Foot slopes and fans	Old local alluvium mainly from interbedded sandstone, shale, and cherty limestone.
Monongahela	Stream terrace	Old mixed general alluvium from sandstone; some shale and limestone
Grading to Planosols with claypan:		
Conasauga	Upland	Residuum from interbedded limestone, calcareous shale, and sandy shale
Rarden	Upland	Residuum from shale and fine-grained, platy sandstone or limestone
Grading to Alluvial soils:		
Sequatchie	Stream terrace	Old mixed general alluvium from uplands underlain by sandstone and shale; some limestone and other material.
Reddish-Brown Lateritic soils:		
Anniston	Foot slopes	Old local alluvium, mainly from sandstone, shale, and quartzite
Cumberland	Stream terrace	Old mixed general alluvium from uplands underlain chiefly by limestone; some sandstone and shale in places.
Decatur	Upland	Residuum from high-grade limestone

See footnotes at end of table.

orders, are discussed in this section. A great soil group consists of soil series that have the same general sort of profile, although they can differ greatly in kinds of parent material, relief, and degree of development. Above the great soil group is the order. Each great soil group is classified in one of the three orders, which are zonal, intrazonal, and azonal soils.

The soils in Calhoun County are classified in table 9 according to soil orders and great soil groups. Some of the factors that have contributed to differences in soil morphology are also given. Following the table, the great soil groups and the soil series in each group are discussed, and some relationships of the series are given. This classification is based on very limited data, and revisions may be needed when additional information is available.

and some of the factors that have contributed to their morphology

ORDER

Drainage class	Slope range	Degree of profile development [1]	Generalized descriptions of moist profiles [2]
	Percent		
Good	0–25	Strong	Dark grayish-brown fine sandy loam or loam over dark-red to yellowish-red fine sandy clay.
Good	2–15	Strong	Dark grayish-brown to brown gravelly fine sandy loam over reddish, firm silty clay loam.
Good	2–40	Strong	Yellowish-brown to light brownish-gray cherty silt loam to stony loam over yellowish-red to red cherty silty clay loam to silty clay loam or stony silty clay.
Good	2–10	Strong	Dark-brown to dark grayish-brown silt loam over reddish silty clay loam to clay loam.
Good	6–10	Strong	Very dark grayish-brown to light brownish-gray fine sandy loam over reddish fine sandy clay to fine sandy clay loam.
Good	0–6	Moderate	Dark-brown silt loam over yellowish-red silty clay loam.
Good	2–6	Strong	Dark-brown cherty silt loam over reddish-brown to yellowish-red cherty silty clay.
Good	2–10	Strong	Dark grayish-brown to light brownish-gray fine sandy loam over red to yellowish-red fine sandy clay loam.
Good	2–10	Moderate	Brown to dark-brown silt loam over yellowish-red, light silty clay loam. A fragipan is at a depth of about 20 inches.
Moderately good	0–6	Moderate	Dark-brown silt loam over yellowish-brown silty clay loam.
Good	2–25	Moderate	Dark grayish-brown to dark-brown cherty silt loam or stony loam over yellowish-brown to light yellowish-brown cherty silty clay loam.
Good	2–10	Strong	Grayish-brown fine sandy loam over yellowish-brown fine sandy clay loam.
Good	2–25	Strong	Dark grayish-brown fine sandy loam over yellowish-brown, light fine sandy clay.
Good	2–15	Strong	Dark-brown to dark reddish-brown cherty silty clay loam over red cherty silty clay loam to silty clay.
Good	0–6	Strong	Dark-brown to dark reddish-brown silt loam over reddish-brown to yellowish-red silty clay loam.
Moderately good to good.	2–10	Strong	Yellowish-red to dark-brown fine sandy loam over yellowish-red fine sandy clay loam. A fragipan is at a depth of about 27 inches.
Moderately good	0–6	Strong	Dark-brown to very dark grayish-brown silt loam over yellowish-brown to yellowish-red silty clay loam.
Moderately good	2–10	Strong	Dark grayish-brown cherty silt loam over yellowish-brown to strong-brown cherty silty clay loam.
Moderately good	0–10	Strong	Dark grayish-brown fine sandy loam over yellowish-brown fine sandy clay loam.
Moderately good	0–6	Strong	Dark grayish-brown to grayish-brown loam over yellow to yellowish-brown fine sandy clay loam.
Moderately good	2–6	Strong	Dark-brown to pale-brown silt loam over yellowish-brown, plastic silty clay.
Moderately good	2–10	Moderate	Brown to yellowish-brown silt loam over yellowish-red, mottled with strong-brown, plastic silty clay or clay.
Good	0–6	Moderate	Dark grayish-brown to dark-brown fine sandy loam over dark-brown fine sandy clay loam.
Good	0–25	Strong	Very dark-brown to dark reddish-brown loam over dark-red sandy clay loam.
Good	2–25	Strong	Dark reddish-brown gravelly loam over dark-red to red gravelly silty clay to silty clay loam.
Good	0–25	Strong	Dark reddish-brown loam over dark-red silty clay and clay.

TABLE 9.—*Soil series classified by order and great soil group and*

INTRAZONAL

Great soil group and soil series	Topographic position	Parent material
Planosols with fragipan:		
Purdy	Stream terrace	Old mixed general alluvium from uplands underlain mainly by sandstone; some shale and limestone.
Robertsville	Stream terrace	Old mixed general alluvium from uplands underlain mainly by limestone; some shale.
Taft	Stream terrace	Old mixed general alluvium from uplands underlain mainly by limestone; some shale.
Tyler	Stream terrace	Old mixed general alluvium from uplands underlain mainly by sandstone and shale; some limestone.
Humic Gley soils:		
Dunning	First bottom	Recent general alluvium from uplands underlain mainly by limestone; some influence from shale.
Low-Humic Gley soils:		
Atkins	First bottom	Recent general and local alluvium from uplands underlain by shale and sandstone.
Lee	First bottom and sinks.	Recent general and local alluvium from uplands underlain by limestone and cherty limestone.
Melvin	First bottom	Recent general alluvium from uplands underlain mainly by limestone, chert, and shale.

AZONAL

Great soil group and soil series	Topographic position	Parent material
Alluvial soils:		
Central concept:		
Camp	Foot slopes	Recent local alluvium mainly from weak-red, acid, sandy shale
Huntington	Depressions in upland.	Recent local alluvium mainly from limestone
Lindside	First bottom	Recent general and local alluvium from uplands underlain by limestone, chert, and shale.
Lobelville	First bottom	Recent general and local alluvium from uplands underlain by cherty limestone.
Philo	First bottom	Recent general and local alluvium from uplands underlain by sandstone and shale; limestone influence in places.
Pope	First bottom	Recent general alluvium from uplands underlain mainly by sandstone and shale; limestone influence in places.
Grading to Low-Humic Gley soils:		
Newark	First bottom	Recent general and local alluvium from uplands underlain by limestone, chert, and shale.
Stendal	First bottom	Recent general and local alluvium from uplands underlain by sandstone and shale; limestone influence in places.
Lithosols grading to Red-Yellow Podzolic soils:		
Lehew	Upland	Residuum from weak-red, acid, sandy shale
Montevallo	Upland	Residuum from interbedded shale and fine-grained sandstone or limestone
Talladega	Upland	Residuum from Talladega slate, schist, and phyllite
Lithosols grading to Sols Bruns Acides:		
Muskingum	Upland	Residuum from sandstone and shale

[1] Estimated from the number of important genetic horizons and the degree of contrast between them.
[2] Applies to profiles not materially affected by erosion.

Soils in each of the three orders—zonal, intrazonal, and azonal—may have originated from similar kinds of parent material. Major differences among soils in the county within any one of these orders appear to be closely related to differences in the kinds of parent material. The thickness of soils developed from residual material appears to be closely related to the volume of the residue after weathering and to the rate of geologic erosion. The chemical and physical nature of the parent material modifies the rate and direction of chemical changes induced by climate and vegetation. The kind of parent material also exerts a pronounced influence on the kinds of vegetation that grow on the soil.

Zonal soils are well drained and well developed, and they have formed under nearly uniform climate and vegetation. Their parent material has been in place a long time, but it has not been subject to extremes of relief. Climate and vegetation have had the greatest influence

some of the factors that have contributed to their morphology—Continued

ORDER

Drainage class	Slope range	Degree of profile development [1]	Generalized descriptions of moist profiles [2]
Poor	0–2	Strong	Mottled very dark gray to dark grayish-brown silt loam over mottled light brownish-gray fine sandy clay.
Poor	0–2	Strong	Mottled dark grayish-brown to very dark grayish-brown silt loam over mottled light brownish-gray to light-gray silty clay loam.
Somewhat poor	0–2	Strong	Dark-brown to light brownish-gray silt loam over light olive-brown to yellowish-brown, mottled silty clay loam.
Somewhat poor	0–2	Strong	Grayish-brown to very dark grayish-brown silt loam over mottled light yellowish-brown to yellowish-brown fine sandy clay loam.
Poor	0–2	Weak	Mottled dark reddish-gray silt loam over mottled dark grayish-brown to very dark grayish-brown silty clay.
Poor	0–2	Weak	Mottled dark grayish-brown silt loam over mottled light brownish-gray to light olive-gray silt loam or clay loam.
Poor	0–2	Weak	Dark-gray to very dark-gray silt loam and cherty silt loam over mottled light brownish-gray to light-gray cherty silt loam.
Poor	0–2	Weak	Mottled dark-brown to dark grayish-brown silt loam over mottled grayish-brown to light-gray silt loam to silty clay loam.

ORDER

Good	2–6	Weak	Weak-red silt loam over weak-red silt loam or loam.
Good	0–2	Very weak	Dark reddish-brown or dark-brown silt loam over dark reddish-brown silt loam or light silty clay loam.
Moderately good	0–2	Weak	Dark-brown silt loam over slightly mottled dark-brown to strong-brown silt loam.
Somewhat poor	0–2	Weak to moderate	Dark grayish-brown silt loam and cherty silt loam over pale-brown to yellowish-brown, mottled silt loam and cherty silt loam.
Moderately good	0–2	Weak	Very dark grayish-brown to dark-brown fine sandy loam to silt loam over slightly mottled, dark-brown fine sandy loam to silt loam.
Good	0–2	Very weak	Dark-brown to dark grayish-brown silt loam and fine sandy loam over dark-brown, heavy silt loam or fine sandy loam.
Somewhat poor	0–2	Weak	Dark-brown silt loam over strongly mottled, very dark grayish-brown to dark-brown silt loam.
Somewhat poor	0–2	Weak	Very dark grayish-brown fine sandy loam to silt loam over strongly mottled, yellowish-brown fine sandy loam.
Good	2–30	Weak	Weak-red shaly loam or silt loam over weak-red, acid sandy shale.
Good	2–40	Weak	Very dark grayish-brown shaly silt loam over yellowish-brown shaly silt loam.
Good	10–40	Weak	Dark grayish-brown to brown loam over yellowish-red to strong-brown silty clay loam to silt loam.
Good	10–25	Weak	Very dark grayish-brown to light brownish-gray stony fine sandy loam over yellowish-brown loamy fine sand.

[3] The Tate and Masada profiles are partly within the range of the Red members and partly within that of the Yellow members.

on these soils, and relief and age the least. Thus the soils that have developed from various kinds of parent material have many similar properties.

Uncultivated areas of all the well-drained, well-developed soils have a surface layer consisting of organic debris in various stages of decomposition. All have dark-colored A_1 horizons. The A_2 horizons are lighter than either the A_1 or the B. Generally, the B horizon is uniform yellow, brown, or red, and it is heavier textured than the A_1 or A_2. The C horizon of zonal soils varies in color and texture, but it is usually red, brown, or yellow mottled with gray or brown.

Intrazonal soils occur on nearly level areas where internal and external drainage are restricted or where geologic erosion is very slow. These soils have been in place a long time, and they have more or less well-developed soil characteristics that reflect the dominating influence of some local factor of parent material or relief

over the normal effects of climate and vegetation. The properties of intrazonal soils in this county are generally the result of level relief influenced greatly by the character of the parent material and by the kinds of vegetation that grow in such an environment.

Azonal soils lack distinct, genetically related horizons because of their youth, resistant parent material, or steep topography. They occur where the parent material has been in place only a short time; for example, where recently transported material has been deposited. Azonal soils have very poorly defined or no genetic horizons. They are young and have few or none of the properties of zonal soils. They are frequently referred to as A-C soils because they do not have a B horizon.

Azonal soils are on some hilly and steep areas as well as on comparatively level areas. In steep areas, much water runs off the soil and contributes to relatively rapid geologic erosion. Soils in these places are young because the parent materials are constantly renewed or mixed. The changes brought about by vegetation and climate may be so slight that the soils are essentially A-C, or azonal.

Zonal soils

The zonal soils in Calhoun County are Red-Yellow Podzolic soils of the central concept; Red-Yellow Podzolic soils grading to Reddish-Brown Lateritic soils, to Planosols with fragipan, to Planosols with claypan, and to Alluvial soils; and Reddish-Brown Lateritic soils.

RED-YELLOW PODZOLIC SOILS, CENTRAL CONCEPT

The Red-Yellow Podzolic great soil group consists of well-developed, well-drained, acid soils having thin organic A_0 and organic-mineral A_1 horizons over a light-colored, bleached A_2 horizon. This is underlain by a red, yellow, or yellowish-red, more clayey B horizon (*4*). In this report the Red-Yellow Podzolic great soil group has been divided into red members and yellow members according to the color of the clayey B horizon.

RED MEMBERS

Soils of the Allen, Enders, Fullerton, Georgeville, Linker, Masada, Minvale, Nolichucky, and Tate series are the red members of the Red-Yellow Podzolic great soil group. All of these soils are well drained, and they have apparently developed under fairly similar climate and vegetation. The Tate and Masada series intergrade toward the yellow members of the Red-Yellow Podzolic great soil group.

The red members range in slope from level to steep, but slope is not altogether the cause of differences among the soils. Many of the profile differences are explained chiefly by the marked differences in parent material.

The degree of maturity may vary somewhat, but all are old enough to have moderately well developed profiles.

YELLOW MEMBERS

The yellow members of the Red-Yellow Podzolic great soil group in Calhoun County include the Altavista, Clarksville, Holston, and Jefferson series. These soils have developed under similar climate and vegetation. They range in slope from level to steep.

The causes of color differences in the yellow and the red members are not known. However, it appears that the parent material of yellow members was lower in bases or less well drained internally than the parent material of the red members. The parent materials for the yellow members were derived from cherty limestone, sandstone and shale, and from slate, schist and phyllite.

RED-YELLOW PODZOLIC SOILS GRADING TO REDDISH-BROWN LATERITIC SOILS

Soils of the Dewey and the Etowah series are Red-Yellow Podzolic soils grading to Reddish-Brown Lateritic soils. They are generally deep and well drained. They lack the highly leached, gray A_2 layer and the distinct horizonation that are characteristic of the Red-Yellow Podzolic soils, central concept. They generally have a brown or dark brown surface soil, which grades into a dark-brown, reddish-brown, or reddish, heavier textured subsoil. The Dewey soils are on uplands, and they have developed from residuum from limestone and in places from cherty limestone. The Etowah soils are on stream terraces, and they have developed in old general alluvium washed from soils underlain by limestone, sandstone, and shale.

RED-YELLOW PODZOLIC SOILS GRADING TO PLANOSOLS WITH FRAGIPAN

In Calhoun County soils of the Cane, Captina, Landisburg, Locust, and Monongahela series are Red-Yellow Podzolic soils grading to Planosols with a fragipan. These soils have the normal Red-Yellow Podzolic morphology, but they have a fragipan at depths ranging from 20 to 26 inches. The fragipan affects the normal movement of water in the soil, especially in the lower part of the subsoil, because the normal downward movement is retarded considerably by the slowly permeable pan. Consequently, in periods of normal or excess rainfall, the upper parts of these soils are saturated with water. In periods of dry weather, these soils are droughty because the upward movement of water is retarded by the pan.

These soils are moderately well drained. They have developed on foot slopes and stream terraces from old local and general alluvium that washed from soils underlain by limestone, cherty limestone, sandstone, and shale, or from mixtures of these materials.

RED-YELLOW PODZOLIC SOILS GRADING TO PLANOSOLS WITH CLAYPAN

The Conasauga and Rarden soils are Red-Yellow Podzolic soils grading to Planosols with a claypan. These soils are characterized by having a thin, leached, light-colored A_2 horizon separated by an abrupt boundary from the heavy, plastic clay subsoil with a strong structure.

The Rarden and Conasauga soils are moderately well drained, upland soils that have developed from residual material on slopes in the range of 2 to 10 percent.

The Rarden soils have formed primarily from weathered Floyd shale, and the Conasauga soils from weathered interbedded limestone, calcareous shale, and sandy shale.

RED-YELLOW PODZOLIC SOILS GRADING TO ALLUVIAL SOILS

The Sequatchie soils are not truly representative of the Red-Yellow Podzolic group but grade toward the Alluvial great soil group.

They lack a distinct A_2 horizon, but the areas mapped have been disturbed by cultivation. It is probable that the plow layer now includes the former thin A_1 and A_2 horizons. The B horizon is weakly developed but is somewhat more clayey than adjacent horizons.

REDDISH-BROWN LATERITIC SOILS

The Reddish-Brown Lateritic group consists of well-drained soils having dark reddish-brown, granular surface soils, red, friable clay B horizons, and red or reticulately mottled lateritic parent material. They have developed under tropical forest vegetation in a humid tropical climate having wet and dry seasons (*4*). In this county the Anniston, Cumberland, and Decatur soils are members of this group. These soils do not entirely satisfy the definitions of Reddish-Brown Lateritic soils because they did not develop under a tropical forest, and their subsoil is generally thinner and less friable than the typical Reddish-Brown Lateritic soils. In addition, the clay in the subsoil is probably mainly kaolinite rather than sesquioxides. The nature of the clay fraction and the reaction of the Anniston, Cumberland, and Decatur soils are not significantly different from those of the Red-Yellow Podzolic soils.

However, the Anniston, Cumberland, and Decatur soils are distinguished by their characteristic dark-brown to dark reddish-brown surface layer and by their thick, dark-red, fairly friable B horizon. The Decatur soils occur on uplands, and their parent material is residuum from the weathering of high-grade limestone. The Anniston soils occur on foot slopes, and the parent material is old local alluvium that washed mainly from sandstone, shale, and quartzite. The Cumberland soils are on stream terraces; they have developed in old general alluvium washed from uplands underlain chiefly by limestone that in places was influenced by sandstone and shale.

Intrazonal soils

The intrazonal soils in Calhoun County are members of the Planosols with fragipan, Humic Gley, and Low-Humic Gley great soil groups.

PLANOSOLS WITH FRAGIPAN

This group consists of soils having one or more horizons abruptly separated from and sharply contrasting to an adjacent horizon because of cementation, compaction, or high clay content (*9*). They have developed on level or nearly level topography, under grass or forest vegetation, and in a humid or subhumid climate.

In this county, the Planosols with a fragipan are members of the Purdy, Robertsville, Taft, and Tyler series. These soils are on level to nearly level stream terraces, and they are poorly to somewhat poorly drained. They have B horizons that are characteristically more dense or compact than those of most zonal soils, but the degree of development varies.

These Planosols developed in a climate that was similar to that under which the zonal soils developed, but they are generally more moist and less well aerated. The vegetation on the Planosols was probably somewhat different from that on the Red-Yellow Podzolic soils, but deciduous forests predominated on both. Most Planosols appear to be older in development than the Red-Yellow Podzolic soils because they have a leached or lighter colored surface soil and a more compact subsoil. Because of the relief of these soils, geologic erosion has been slow. This alone, however, is not likely to have caused the formation of Planosols. Possibly slow internal drainage, combined with slow surface drainage and unusual siltiness of the parent material, may have caused abnormal cementation in or below the B_1 horizon.

HUMIC GLEY SOILS

The Humic Gley group consists of poorly to very poorly drained hydromorphic soils with dark-colored, organic-mineral horizons of moderate thickness underlain by mineral gley horizons (*9*). Humic Gley soils occur naturally either under swamp-forest or herbaceous marsh vegetation, mostly in humid and subhumid climates of greatly varying thermal efficiency.

In Calhoun County, only the Dunning series is classified in this great soil group. The Dunning soils occur on flood plains subject to frequent overflow. They are developing in recent general alluvium that washed from uplands underlain mainly by limestone, influenced in places by shale. Dunning soils have a characteristically dark-colored surface layer that is relatively high in organic matter. Under the surface layer is a heavy, dark-colored, mineral gleyed horizon.

LOW-HUMIC GLEY SOILS

This great soil group consists of poorly to somewhat poorly drained soils having very thin surface horizons and moderately high supplies of organic matter, over mottled gray and brown, gleyed mineral horizons that have a low degree of textural differentiation (*9*). Low-Humic Gley soils vary widely in texture, and their parent material varies widely in physical and chemical properties. These soils occur largely under a natural cover of swamp forest and, in some areas, of marsh plants. Most of them are medium to very strongly acid.

In Calhoun County, the Atkins, Lee, and Melvin soils are members of the Low-Humic Gley group. All are poorly drained and occur on local and general alluvium along stream bottoms that are subject to overflow. These three series differ in parent material, but they are similar in that they all have the profile characteristics typical of the Low-Humic Gley group.

Azonal soils

The Azonal soils in this county consist of Alluvial soils of the central concept and those grading to Low-Humic Gley soils; and Lithosols grading to Red-Yellow Podzolic soils and to Sols Bruns Acides.

ALLUVIAL SOILS, CENTRAL CONCEPT

Alluvial soils have developed in transported and relatively recently deposited alluvium. They are characterized by weak or no modification of the original material by soil-forming processes. The main characteristic of the Alluvial soils is that they lack genetically related horizons. The properties of these soils strongly reflect the character of the alluvial deposits from which they

were derived. Alluvial soils derived from similar parent material, but differing in drainage, are divided according to properties associated with well drained, moderately well drained, and somewhat poorly drained conditions.

The Alluvial soils in Calhoun County are members of the Camp, Huntington, Lindside, Lobelville, Philo, and Pope series. They occur on first bottoms along streams or in depressions or sinks. They also occur along drainageways that extend into the uplands that have nearly level to gently sloping relief and good to somewhat poor drainage.

The well-drained Camp soils are on foot slopes and along narrow drainageways and draws. They are developing in local alluvium that has washed from the Lehew soils and other soils that are underlain by weak-red, acid, sandy shale.

The well-drained Huntington soils occur in level to depressed areas on uplands. They are developing in alluvium that washed primarily from soils derived from limestone.

The moderately well drained Lindside soils are along the larger streams subject to overflow. These soils are developing in general alluvium that washed primarily from soils derived from limestone. They are also developing in local alluvium along many of the small drainageways and draws.

The somewhat poorly drained Lobelville soils are on first bottoms. These soils are developing in general and local alluvium that washed from soils underlain chiefly by cherty limestone.

The moderately well drained Philo and the well drained Pope occur along stream bottoms subject to overflow. They are developing in recent general alluvium that has washed primarily from soils underlain by sandstone and shale. The Philo soils are also developing in local alluvium.

ALLUVIAL SOILS GRADING TO LOW-HUMIC GLEY SOILS

The Newark and the Stendal soils have evidence of gleying, and they are considered to be grading to the Low-Humic Gley soils.

The somewhat poorly drained Newark soils occur along larger streams subject to overflow and along many smaller drainageways and draws. They are developing in general alluvium that washed mainly from soils derived from limestone but partly in local alluvium along many small drainageways and draws.

The somewhat poorly drained Stendal soils occur along stream bottoms subject to overflow. They are developing in recent general alluvium that washed from soils underlain by sandstone and shale. They are also developing in local alluvium.

LITHOSOLS GRADING TO RED-YELLOW PODZOLIC SOILS

Lithosols are soils having an incomplete solum or no clearly expressed soil morphology. They consist of a freshly and imperfectly weathered mass of hard rock or hard rock fragments, and they are largely confined to steeply sloping land (*9*). They have developed where there was ample moisture. The soils generally consist of materials that are easily eroded.

The Lehew, Montevallo, and Talladega soils are classified as Lithosols. However, they have some characteristics of the Red-Yellow Podzolic soils in that, in places, they have a thin but discontinuous B or B-C horizon. They do not have a well-defined B horizon. All occur on hilly to steep relief, and they differ mainly in parent material.

The Lehew soils consist of material that has weathered from acid, sandy shale. They are conspicuous on the landscape because the parent rock and parent material have a uniform weak-red or purplish color. The soil material is generally 10 to 20 inches deep over bedrock.

The Montevallo soils consist of material that has weathered from interbedded shale and fine-grained sandstone. They are generally very shallow to bedrock.

The Talladega soils consist of material that has weathered from the Talladega formation, which includes slate, schist, and phyllite.

LITHOSOLS GRADING TO SOLS BRUNS ACIDES

The Muskingum soils have some of the characteristics of the Sols Bruns Acides, and they are considered as grading to that group. The Sols Bruns Acides are strongly acid to very strongly acid and have a low base status. They have a thin A_1 horizon, a paler intervening horizon (an A_2 or possibly a B_1) that is difficult to distinguish from the B_2 horizon, and a B_2 horizon that is uniform in color and has little or no accumulation of silicate clay (*3*).

The Muskingum soils consist of weathered material derived from light-colored, acid sandstone and sandy shale. Stones on the surface are common. The depth to bedrock is generally 10 to 20 inches.

Agriculture

This section describes pioneer and present-day agriculture in Calhoun County. It contains statistics on land use, tenure and types of farms, and crops and livestock production.

The early settlers grew crops and raised livestock mainly for home use. They also grew some cotton for spinning and weaving. Most of the livestock was grazed on land surrounding the settlements.

Cotton and corn sold on the market were the major sources of income. As transportation facilities improved and the demand for cotton increased, additional land was cleared for cotton. By 1860, over 125,000 acres had been cleared in the county.

In the early days, soil fertility was not maintained. When yields were too low, new land was cleared for crops. The better farmers began using fertilizers and rotating crops when they realized the natural fertility of the soil had been depleted.

As farming became more scientific, various programs of the State and Federal governments were started to help farmers improve yields and save their soil through better management.

Agencies that give help to farmers in Calhoun County are Alabama Conservation Department, Alabama State Division of Forestry, Alabama Agricultural Experiment Station, Agricultural Extension Service, Soil Conservation Service, Farmers Home Administration, and the Forest Service.

Land Use

According to the U.S. Census, 49.1 percent of Calhoun County was in farms in 1954. The rest consists of areas owned by the U.S. Government, mining companies, and paper companies and areas occupied by cities. There were 1,996 farms in the county having an average size of 96.1 acres.

Land in farms was used as follows:

	Acres
Cropland	66,012
Pasture (not cropland and not woodland)	24,669
Woodland	93,969
All other land	7,123
Land in farms	191,773

Farm Tenure and Types of Farms

According to the U.S. Census of 1954, 1,386 farms were operated by full owners, 250 by part owners, 7 by managers, and 353 by tenants. In 1954, farms were classified as follows:

	Number
Type of farm:	
Field-crop farms other than vegetable and fruit-and-nut farms	377
Cash grain	27
Cotton	350
Fruit-and-nut farms	5
Dairy farms	88
Poultry farms	65
Livestock farms other than dairy and poultry farms	48
General farms	36
Primarily crop	5
Primarily livestock	5
Crop and livestock	26
Miscellaneous and unclassified farms	1,377

Crops

Cotton and corn have been the chief crops for the past 100 years. Cotton is grown extensively throughout the county, except on the steep or stony soils and on the moderately well drained to poorly drained soils. The largest acreage of cotton and probably the highest yields are in the red-land areas. The acreage of this and other principal crops in Calhoun County are shown in table 10.

Most of the corn is used as livestock feed, but some is used for human consumption. The acreage of corn has declined in the past 20 years, but yields have increased. Most of the oat crop is grazed by livestock during the winter months, but some of it is harvested as grain in the spring. Soybeans, annual lespedeza, and johnsongrass have been the principal hay crops, but sericea lespedeza and alfalfa are more suitable, and their use is increasing.

Nearly every farm has a few fruit trees for home use. There are no commercial orchards in the county.

Livestock

Beef and dairy cattle and poultry have improved in quality in recent years and have become increasingly important in the agricultural economy of the county.

According to the U.S. Census of 1954, 1,585 farms had cattle and calves, 1,123 had hogs and pigs, 213 sold whole milk, and 843 had horses and mules. The number of livestock and poultry on farms is shown in table 11.

TABLE 10.—*Acreages of principal crops and number of fruit trees and grapevines of bearing age in stated years*

Crop	1939	1949	1954
	Acres	*Acres*	*Acres*
Cotton	24, 782	16, 569	6, 854
Corn, all purposes	35, 926	23, 938	20, 410
Small grain:			
Oats threshed or combined	484	1, 084	2, 071
Other grain threshed or combined	258	393	363
Sorghum for all purposes, except sirup	968	910	477
Annual legumes:			
Soybeans for all purposes, grown alone	7, 312	1, 445	1, 523
Cowpeas for all purposes, grown alone	2, 974	1, 189	491
Peanuts for all purposes, grown alone	297	124	40
Hay:			
Alfalfa and alfalfa mixtures cut for hay	82	291	629
Lespedeza cut for hay	2, 036	3, 270	3, 029
Clover, timothy, and mixtures of clover and grasses cut for hay	99	519	518
Small grains	263	339	1, 040
Other hay cut	12, 859	3, 468	2, 500
Seed harvested:			
Lespedeza	56	105	21
Crimson clover	(1)	501	296
Irish potatoes harvested for home use or sale	329	[2] 74	[3] 24
Sweetpotatoes harvested for home use or sale	511	[2] 165	[3] 54
Sugarcane or sorghum harvested for sirup	572	77	144
Vegetables harvested for sale	107	314	294
Fruit and nut trees and vines:	*Number* [4]	*Number* [4]	*Number* [4]
Apple	20, 381	9, 848	2, 938
Peach	27, 821	5, 598	2, 100
Pear	1, 300	757	262
Plum and prune	708	642	241
Grape	1, 099	1, 462	484
Pecan, improved	1, 341	2, 572	1, 649

[1] Not reported.
[2] Does not include acreage for farms with less than 15 bushels harvested.
[3] Does not include acreage for farms with less than 20 bushels harvested.
[4] One year later than year at head of column.

TABLE 11.—*Livestock and poultry on farms in stated years*

Livestock	1939	1949	1954
	Number	*Number*	*Number*
Cattle and calves	[1] 7, 570	10, 208	14, 910
Horses and mules	[1] 4, 467	2, 645	1, 284
Hogs and pigs	[2] 5, 033	5, 975	5, 818
Chickens	[2] 81, 637	[2] 73, 896	[2] 71, 694

[1] Over 3 months old. [2] Over 4 months old.

Glossary

(In this glossary technical terms used in this report are defined for the convenience of readers who cannot refer to them easily elsewhere. Most of the definitions were obtained from the Soil Survey Manual (*11*) and from the 1957 Yearbook of Agriculture, Soil (*12*).)

Acidity. The degree of acidity or alkalinity of a soil mass technically expressed in pH values, or in words, as follows:

	pH		pH
Extremely acid	below 4.5	Neutral	6.6–7.3
Very strongly acid	4.5–5.0	Mildly alkaline	7.4–7.8
Strongly acid	5.1–5.5	Moderately alkaline	7.9–8.4
Medium acid	5.6–6.0	Strongly alkaline	8.5–9.0
Slightly acid	6.1–6.5	Very strongly alkaline	9.1 and higher

Aggregate. A single mass, or cluster, of soil consisting of many soil particles held together, such as a clod, prism, crumb, or granule.

Alluvium. Sand, mud, and other sediment deposited on land by streams.

Available water. The part of water in the soil that can be taken up by plants at rates significant to their growth.

Bedrock. The solid rock underlying soils and other earthy surface formations.

Clay. Mineral soil particles less than 0.002 millimeter in diameter. As a textural class, soil material that contains 40 percent or more of clay, less than 45 percent of sand, and less than 40 percent of silt.

Claypan (argipan). A compact, slowly permeable soil horizon rich in clay and separated more or less abruptly from the overlying soil. Claypans are commonly hard when dry and plastic or stiff when wet.

Colluvium. Mixed deposits of soil material and rock fragments near the bases of steep slopes. The deposits have accumulated through soil creep, slides, and local wash.

Consistence, soil. The combination of properties of soil material that determine its resistance to crushing and its ability to be molded or changed in shape. Consistence depends mainly on forces of attraction between soil particles. Consistence is described by the words *compact, firm, friable, loose, hard, plastic,* and *sticky.*

Compact. Dense and firm but without any cementation.

Firm. Soil material crushes under moderate pressure between thumb and forefinger but resistance is distinctly noticeable.

Friable. Soil material crushes easily under gentle to moderate pressure between thumb and forefinger, and coheres when pressed together.

Loose. Noncoherent.

Hard. Moderately resistant to pressure when dry; can be broken in the hands without difficulty but is barely breakable between thumb and forefinger.

Plastic. Soil material forms wirelike shape when rolled between thumb and forefinger, and moderate pressure is required to deform the soil mass.

Sticky. After pressure, soil material when wet adheres to both thumb and forefinger and tends to stretch somewhat and pull apart rather than to pull free.

Contour tillage. Plowing or cultivation at right angles to the direction of slope, at the same level throughout, and ordinarily at reasonably close intervals.

Cropland. Land regularly used for crops, except forest crops. Cropland includes rotation pasture, cultivated summer fallow, or other land ordinarily used for crops but temporarily idle.

Crumb. A very porous granular structure in soils.

Drainage, soil. The rapidity and extent of the removal of water from the soil by runoff, by flow through the soil to underground spaces, or by both processes. As a condition of the soil, drainage refers to the frequency and duration of periods when the soil is free of saturation. The terms used to describe drainage are *runoff, internal drainage, permeability,* and *natural drainage.*

Runoff. The surface flow of water from an area, or the total volume of surface flow during a specified time. The amount and rapidity of runoff is closely related to slope, and it is affected by the texture, structure, and porosity of the surface soil. The relative degrees of runoff are *ponded, very slow, slow, medium, rapid,* and *very rapid.*

Internal drainage. That quality of a soil that permits the downward flow of excess water through it. It is reflected in the frequency and duration of periods of saturation. Relative terms for expressing internal drainage are *none, very slow, slow, medium, rapid,* and *very rapid.*

Permeability. The quality in soil that enables it to transmit water or air. The relative classes of permeability are *very slow, slow, moderately slow, moderate, moderately rapid, rapid,* and *very rapid.*

Natural drainage. Refers to those conditions that existed during the development of a soil, as opposed to altered drainage. The following relative terms are used to express natural drainage: *very poorly drained, poorly drained, imperfectly or somewhat poorly drained, moderately well drained, well drained, somewhat excessively drained,* and *excessively drained.*

Erosion. The wearing away of the land surface by detachment and transport of soil and rock materials through the action of moving water, wind, or other geological agents. The classes of erosion used in this report are *slightly eroded, moderately eroded, eroded, severely eroded,* and *gullied land.*

Fertility, soil. The inherent quality of a soil that enables it to provide compounds in adequate amounts and in proper balances for the growth of plants when light, moisture, temperature, and the physical condition of the soil are favorable.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Forest. Land not in farms, bearing a stand of trees of any age or stature, including seedlings, and of species that attain a minimum average height of 6 feet at maturity; or land from which such a stand has been removed but on which no other use has been substituted. Forests on farms are commonly called woodland or farm forests.

Fragipan. A compact horizon rich in silt, sand, or both, and usually relatively low in clay. It appears to be indurated (cemented) when dry, but softens on moistening. The fragipan normally interferes with the movement of water and the penetration of roots.

Granular. Individual soil grains grouped into spherical aggregates with distinct sides.

Gravel. Coarse mineral particles ranging from 2 millimeters to 3 inches in diameter. Fine gravel ranges from 2 millimeters to ½ inch in diameter.

Green-manure crops. Any crop grown and plowed under while green for the purpose of improving the soil, especially through the addition of organic matter.

Infiltration. The downward entry of water into soil. The rate of infiltration is defined as the volume of water passing into soil per unit of area per unit of time.

Leaching. The removal of material in solution by the passage of water through soil.

Loam. The textural class name for soil containing a moderate amount of sand, silt, and clay. Loam soils contain 7 to 27 percent of clay, 28 to 50 percent of silt, and less than 52 percent of sand.

Mapping unit. An area shown on a soil map within a boundary and identified by a map symbol. It may be a member of a soil series, a complex, an undifferentiated group of soils, or a miscellaneous land type.

Massive. Large uniform masses of cohesive soil, sometimes with poorly defined and irregular breakage, as in some of the fine-textured alluvial soils; structureless.

Mottled. Soil horizons irregularly marked with spots of color. Descriptive terms: For contrast—*faint, distinct,* or *prominent;* for abundance—*few, common,* and *many;* and for size—*fine, medium,* and *coarse* (*8*).

Nutrient, plant. The elements taken in by a plant, essential to its growth, and used by it in elaboration of its food and tissue. These include nitrogen, phosphorus, calcium, potassium, magnesium, sulfur, iron, manganese, copper, boron, zinc, and other elements obtained mainly from the soil; and carbon, hydrogen, and oxygen, obtained largely from the air and water.

Parent material. The unconsolidated mass of rock material (or peat) from which the soil profile develops.

Productivity, soil. The present capability of a soil for producing a specified plant or sequence of plants under a defined set of management practices.

Profile, soil. A vertical section of the soil through all its horizons and extending into the parent material.

Relief. The elevations or inequalities, collectively, of a land surface.

Sand. Individual rock or mineral fragments in soils having diameters ranging from 0.05 millimeter to 2.0 millimeters. The textural class name of any soil that contains 85 percent or more of sand and not more than 10 percent of clay.

Silt. Individual mineral particles of soil that range in diameter between the upper size of clay, 0.002 millimeter, and the lower size of very fine sand, 0.05 millimeter. The textural class name of a soil that contains 80 percent or more of silt and less than 12 percent of clay. The term "silt" is also used for sediment deposited from water that has individual grains approximately the size of silt, and the term is also sometimes applied loosely to sediment containing a considerable amount of sand and clay.

Soil. The natural medium for the growth of land plants on the surface of the earth. A natural body on the surface of the earth in which plants grow, composed of organic and mineral material.

Stripcropping. The practice of growing crops in a systematic arrangement of strips, or bands. Generally cultivated crops and sod crops are alternated in strips to protect the soil and vegetation against running water or wind. Alternate strips or bands are laid out approximately on the contour on erosive soils or at approximate right angles to the prevailing direction of the wind where soil blowing is a hazard.

Structure, soil. The aggregation of primary soil particles into compound particles, or clusters of primary particles, that are separated from adjoining aggregates by surfaces of weakness. The terminology of soil structure consists of separate sets of terms, which describe distinctness (grade), size (class), and shape and arrangement (type) of visible aggregates or peds. The terms are as follows:

Distinctness. Structureless, weak, moderate, and strong.

Size. Very fine or very thin, fine or thin, medium, coarse or thick, and very coarse or very thick.

Shape and arrangement. Platy, prismatic, columnar, blocky, subangular blocky, granular, and crumb.

Subsoil. Roughly, that part of the profile below plow depth.

Surface soil. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, about 5 to 8 inches in thickness.

Terrace. An embankment, or ridge, constructed across sloping soils, on the contour or at a slight angle to the contour. The terrace intercepts surplus runoff in order to retard it for infiltration into the soil and so that any excess may flow to an outlet at nonerosive velocity.

Texture, soil. The relative proportions of the various size groups of individual soil grains in a mass of soil. Specifically, it refers to the proportions of clay, silt, and sand. A coarse-textured soil is one high in sand; a fine-textured soil contains a large percentage of clay.

Tilth, soil. The physical condition of a soil in respect to its fitness for the growth of a specified plant or sequence of plants.

Topsoil. Surface soil material, usually rich in organic matter, used to topdress roadbanks, parks, gardens, and lawns.

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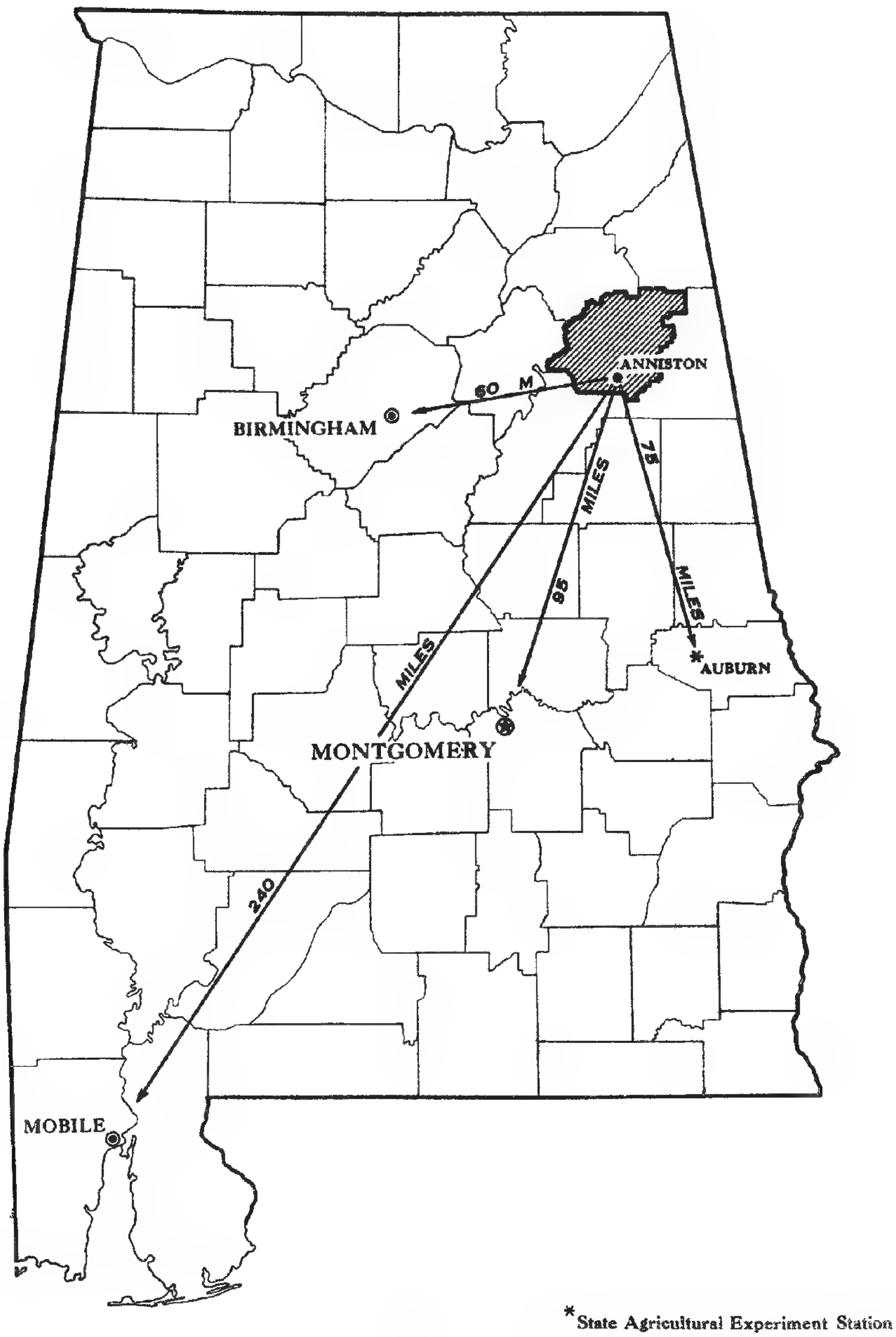
GUIDE TO MAPPING UNITS AND CAPABILITY UNITS

Map symbol	*Soil name*	*Page*	*Capability unit*	*Page*
AaA	Altavista and Masada silt loams, low terraces, 0 to 2 percent slopes	46	IIw-2	9
AaB2	Altavista and Masada silt loams, low terraces, 2 to 6 percent slopes, eroded.	47	IIe-4	8
AbB3	Anniston gravelly clay loam, 2 to 6 percent slopes, severely eroded	48	IIIe-1	10
AbC3	Anniston gravelly clay loam, 6 to 10 percent slopes, severely eroded	48	IVe-1	12
AbD3	Anniston gravelly clay loam, 10 to 15 percent slopes, severely eroded	48	VIe-1	14
AbE3	Anniston gravelly clay loam, 15 to 25 percent slopes, severely eroded	48	VIIe-1	15
AcA	Anniston and Allen gravelly loams, 0 to 2 percent slopes	48	I-1	7
AcB2	Anniston and Allen gravelly loams, 2 to 6 percent slopes, eroded	48	IIe-1	8
AcC2	Anniston and Allen gravelly loams, 6 to 10 percent slopes, eroded	49	IIIe-1	10
AcD2	Anniston and Allen gravelly loams, 10 to 15 percent slopes, eroded	49	IVe-1	12
AcE2	Anniston and Allen gravelly loams, 15 to 25 percent slopes, eroded	49	VIe-1	14
AdC	Anniston and Allen stony loams, 0 to 10 percent slopes	49	IVe-4	14
AdE	Anniston and Allen stony loams, 10 to 25 percent slopes	49	VIIe-1	15
AkA	Atkins silt loam, 0 to 2 percent slopes	50	IVw-1	14
AsA	Atkins and Stendal soils, local alluvium, 0 to 2 percent slopes	50	IVw-1	14
CaB	Camp silt loam, 2 to 6 percent slopes	50	IIe-4	8
CbB2	Cane fine sandy loam, 2 to 6 percent slopes, eroded	51	IIe-5	9
CbC2	Cane fine sandy loam, 6 to 10 percent slopes, eroded	51	IIIe-5	11
CcB	Captina silt loam, 0 to 6 percent slopes	52	IIe-5	9
CcB2	Captina silt loam, 2 to 6 percent slopes, eroded	52	IIe-5	9
CkB	Clarksville cherty silt loam, 2 to 6 percent slopes	52	IIe-3	8
CkC	Clarksville cherty silt loam, 6 to 10 percent slopes	52	IIIe-3	10
CkC2	Clarksville cherty silt loam, 6 to 15 percent slopes, eroded	53	VIe-1	14
CkD	Clarksville cherty silt loam, 10 to 15 percent slopes	53	IVe-2	13
CkE	Clarksville cherty silt loam, 15 to 25 percent slopes	53	VIIe-1	15
ClC	Clarksville-Fullerton stony loams, 6 to 10 percent slopes	53	IVe-4	14
ClD	Clarksville-Fullerton stony loams, 10 to 15 percent slopes	53	VIe-2	14
ClF	Clarksville-Fullerton stony loams, 15 to 40 percent slopes	54	VIIe-1	15
CnB2	Conasauga silt loam, 2 to 6 percent slopes, eroded	54	IIIe-6	11
CoB2	Cumberland gravelly loam, 2 to 6 percent slopes, eroded	55	IIe-1	8
CrB3	Cumberland gravelly clay loam, 2 to 6 percent slopes, severely eroded	55	IIIe-1	10
CrC3	Cumberland gravelly clay loam, 6 to 10 percent slopes, severely eroded	55	IIIe-1	10
CrD3	Cumberland gravelly clay loam, 10 to 25 percent slopes, severely eroded.	55	IVe-1	12
DcB3	Decatur and Cumberland clay loams, 2 to 6 percent slopes, severely eroded.	56	IIIe-1	10
DcC3	Decatur and Cumberland clay loams, 6 to 10 percent slopes, severely eroded.	56	IIIe-1	10
DcD3	Decatur and Cumberland clay loams, 10 to 25 percent slopes, severely eroded.	56	IVe-1	12
DdA	Decatur and Cumberland loams, 0 to 2 percent slopes	56	I-1	7
DdB2	Decatur and Cumberland loams, 2 to 6 percent slopes, eroded	56	IIe-1	8
DdC2	Decatur and Cumberland loams, 6 to 10 percent slopes, eroded	57	IIIe-1	10
DdD2	Decatur and Cumberland loams, 10 to 25 percent slopes, eroded	57	IVe-1	12
DeC3	Dewey cherty silty clay loam, 6 to 10 percent slopes, severely eroded	57	IIIe-1	10
DeD3	Dewey cherty silty clay loam, 10 to 15 percent slopes, severely eroded	58	IVe-1	12
DsB3	Dewey silty clay loam, 2 to 6 percent slopes, severely eroded	58	IIIe-1	10
DsC3	Dewey silty clay loam, 6 to 10 percent slopes, severely eroded	58	IIIe-1	10
DuA	Dunning silt loam, overwashed, 0 to 2 percent slopes	58	IVw-1	14
EnB2	Enders gravelly fine sandy loam, 2 to 6 percent slopes, eroded	59	IIe-4	8
EnC2	Enders gravelly fine sandy loam, 6 to 10 percent slopes, eroded	59	IIIe-4	11
EnD	Enders gravelly fine sandy loam, 10 to 15 percent slopes	59	IVe-2	13
EtA	Etowah silt loam, 0 to 2 percent slopes	59	I-1	7
EtB2	Etowah silt loam, 2 to 6 percent slopes, eroded	60	IIe-1	8
FcB	Fullerton cherty silt loam, 2 to 6 percent slopes	60	IIe-3	8
FcC2	Fullerton cherty silt loam, 6 to 10 percent slopes, eroded	60	IIIe-3	10
FcD2	Fullerton cherty silt loam, 10 to 15 percent slopes, eroded	61	IVe-2	13
FcE	Fullerton cherty silt loam, 15 to 25 percent slopes	61	VIe-1	14
FlC3	Fullerton cherty silty clay loam, 6 to 10 percent slopes, severely eroded	61	IVe-2	13
FlD3	Fullerton cherty silty clay loam, 10 to 15 percent slopes, severely eroded.	61	VIe-1	14
FlE3	Fullerton cherty silty clay loam, 15 to 25 percent slopes, severely eroded.	61	VIIe-1	15
GeC2	Georgeville and Tate soils, 2 to 10 percent slopes, eroded	61	IIIe-4	11
Gl	Gullied land	62	VIIe-1	15
HoB2	Holston fine sandy loam, 2 to 6 percent slopes, eroded	62	IIe-2	8
HoC2	Holston fine sandy loam, 6 to 10 percent slopes, eroded	63	IIIe-2	10
HuA	Huntington silt loam, local alluvium, 0 to 2 percent slopes	63	I-2	7
JeB2	Jefferson gravelly fine sandy loam, 2 to 6 percent slopes, eroded	63	IIe-2	8
JeC2	Jefferson gravelly fine sandy loam, 6 to 10 percent slopes, eroded	64	IIIe-2	10
JeD2	Jefferson gravelly fine sandy loam, 10 to 15 percent slopes, eroded	64	IVe-2	13
JfB	Jefferson stony fine sandy loam, 0 to 10 percent slopes	64	IVe-4	14
JfD	Jefferson stony fine sandy loam, 10 to 25 percent slopes	64	VIe-2	14

GUIDE TO MAPPING UNITS AND CAPABILITY UNITS—Continued

Map symbol	*Soil name*	*Page*	*Capability unit*	*Page*
LaB2	Landisburg cherty silt loam, 2 to 6 percent slopes, eroded	64	IIe-5	9
LaC2	Landisburg cherty silt loam, 6 to 10 percent slopes, eroded	65	IIIe-5	11
LcA	Lee silt loam and cherty silt loam, 0 to 2 percent slopes	65	IVw-1	14
LeA	Lee silt loam, local alluvium, 0 to 2 percent slopes	65	IVw-1	14
LhC2	Lehew-Montevallo soils, 2 to 10 percent slopes, eroded	66	IVe-3	13
LhD2	Lehew-Montevallo soils, 10 to 15 percent slopes, eroded	66	VIe-3	15
LhE	Lehew-Montevallo soils, 15 to 30 percent slopes	66	VIIe-2	15
LkA	Lindside silt loam, local alluvium, 0 to 2 percent slopes	66	IIIw-1	12
LlA	Lindside and Newark silt loams, 0 to 2 percent slopes	66	IIIw-1	12
LnC2	Linker gravelly fine sandy loam, 6 to 10 percent slopes, eroded	67	IIIe-2	10
LoA	Lobelville cherty silt loam, local alluvium, 0 to 2 percent slopes	68	IIIw-1	12
LpA	Lobelville silt loam and cherty silt loam, 0 to 2 percent slopes	68	IIIw-1	12
LsA	Locust gravelly fine sandy loam, 0 to 2 percent slopes	69	IIe-5	9
LsB2	Locust gravelly fine sandy loam, 2 to 6 percent slopes, eroded	69	IIe-5	9
LsC2	Locust gravelly fine sandy loam, 6 to 10 percent slopes, eroded	69	IIIe-5	11
MaA	Melvin silt loam, 0 to 2 percent slopes	70	IVw-1	14
Me	Mine wash	70	None	
MnB2	Minvale cherty silt loam, 2 to 6 percent slopes, eroded	70	IIe-3	8
MoA	Monongahela loam, 0 to 2 percent slopes	71	IIe-5	9
MoB2	Monongahela loam, 2 to 6 percent slopes, eroded	71	IIe-5	9
MsD	Montevallo shaly silt loam, 10 to 15 percent slopes	72	VIe-3	15
MsE	Montevallo shaly silt loam, 15 to 40 percent slopes	72	VIIe-2	15
MtC3	Montevallo shaly silty clay loam, 6 to 10 percent slopes, severely eroded	72	VIe-3	15
MtD3	Montevallo shaly silty clay loam, 10 to 40 percent slopes, severely eroded.	72	VIIe-2	15
MuD	Muskingum stony fine sandy loam, 10 to 15 percent slopes	72	VIe-2	14
MuE	Muskingum stony fine sandy loam, 15 to 25 percent slopes	73	VIIe-2	15
NcB2	Nolichucky gravelly fine sandy loam, 2 to 6 percent slopes, eroded	73	IIe-2	8
NcC2	Nolichucky gravelly fine sandy loam, 6 to 10 percent slopes, eroded	73	IIIe-2	10
PhA	Philo and Stendal fine sandy loams, 0 to 2 percent slopes	74	IIIw-1	12
PlA	Philo and Stendal silt loams, 0 to 2 percent slopes	74	IIIw-1	12
PkA	Philo and Stendal soils, local alluvium, 0 to 2 percent slopes	75	IIIw-1	12
PoA	Pope fine sandy loam, 0 to 2 percent slopes	75	IIw-1	9
PpA	Pope silt loam, 0 to 2 percent slopes	75	IIw-1	9
PuA	Purdy silt loam, 0 to 2 percent slopes	76	IVw-1	14
RaB2	Rarden gravelly loam, shallow, 2 to 6 percent slopes, eroded	76	IIIe-6	11
RaC2	Rarden gravelly loam, shallow, 6 to 10 percent slopes, eroded	76	IIIe-6	11
RdB2	Rarden silt loam, shallow, 2 to 6 percent slopes, eroded	76	IIIe-6	11
RdC2	Rarden silt loam, shallow, 6 to 10 percent slopes, eroded	76	IIIe-6	11
ReB3	Rarden silty clay loam, shallow, 2 to 6 percent slopes, severely eroded	77	IVe-3	13
ReC3	Rarden silty clay loam, shallow, 6 to 10 percent slopes, severely eroded	77	IVe-3	13
RmC2	Rarden-Montevallo complex, 2 to 10 percent slopes, eroded	77	IVe-3	13
RoA	Robertsville silt loam, 0 to 2 percent slopes	78	IVw-1	14
RsA	Robertsville silt loam, overwashed, 0 to 2 percent slopes	78	IIIw-2	12
ScA	Sequatchie fine sandy loam, 0 to 2 percent slopes	78	I-1	7
ScB	Sequatchie fine sandy loam, 2 to 6 percent slopes	79	IIe-2	8
ScB2	Sequatchie fine sandy loam, 2 to 6 percent slopes, eroded	79	IIe-2	8
SeB2	Sequatchie gravelly fine sandy loam, 2 to 6 percent slopes, eroded	79	IIe-2	8
Sr	Stony rough land, limestone	79	VIIe-2	15
Ss	Stony rough land, sandstone	79	VIIe-2	15
St	Stony rough land, slate	79	VIIe-2	15
TaA	Taft silt loam, 0 to 2 percent slopes	80	IIIw-2	12
TdE	Talladega soils, 10 to 40 percent slopes	80	VIIe-2	15
TeB2	Tate gravelly silt loam, 2 to 6 percent slopes, eroded	81	IIe-4	8
TeC2	Tate gravelly silt loam, 6 to 10 percent slopes, eroded	81	IIIe-4	11
TgB3	Tate gravelly silty clay loam, 2 to 6 percent slopes, severely eroded	81	IIIe-4	11
TgC3	Tate gravelly silty clay loam, 6 to 10 percent slopes, severely eroded	81	IVe-2	13
Tr	Terrace escarpments	82	VIIe-2	15
TyA	Tyler silt loam, 0 to 2 percent slopes	82	IIIw-2	12



Location of Calhoun County in Alabama.

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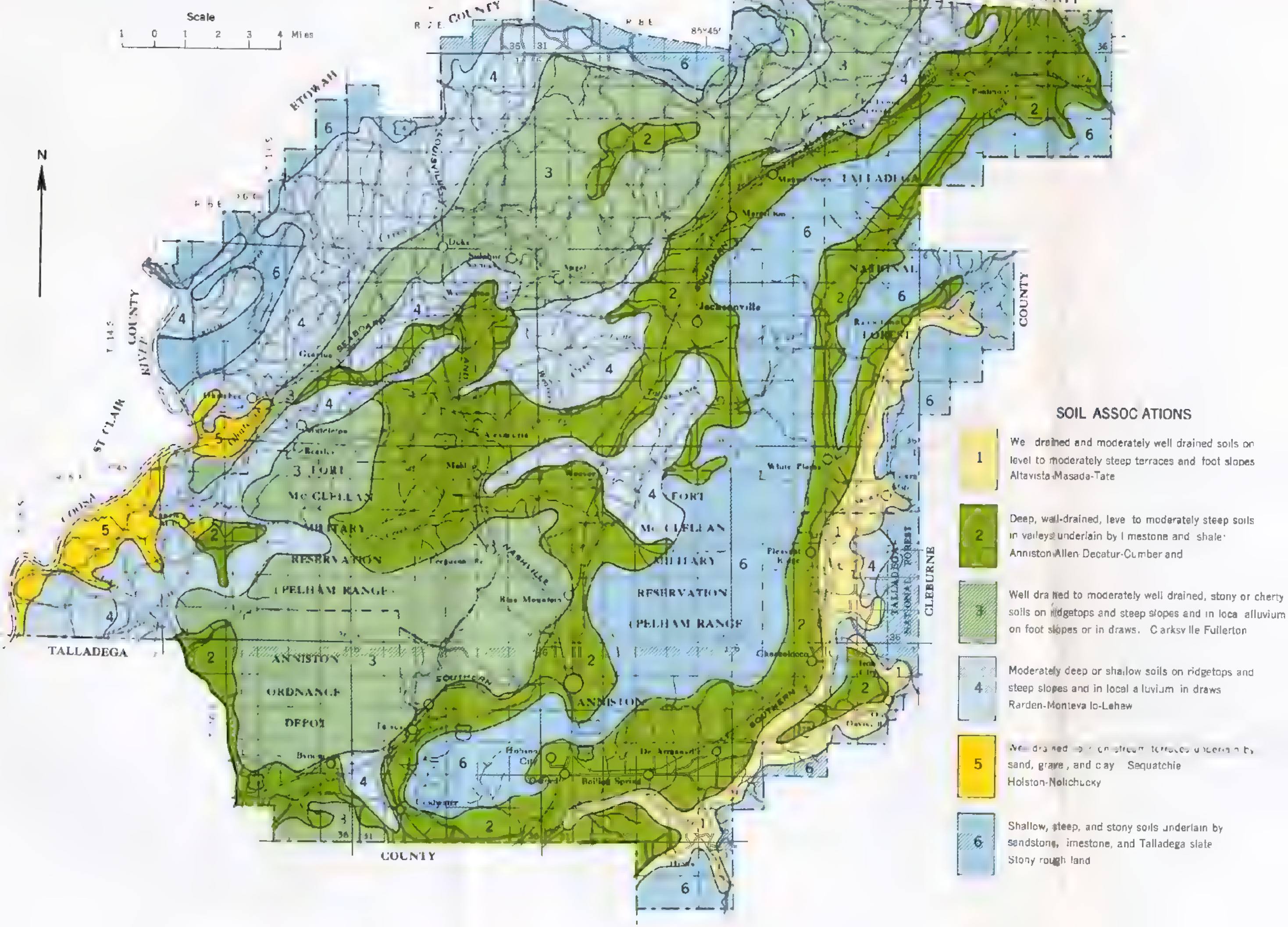
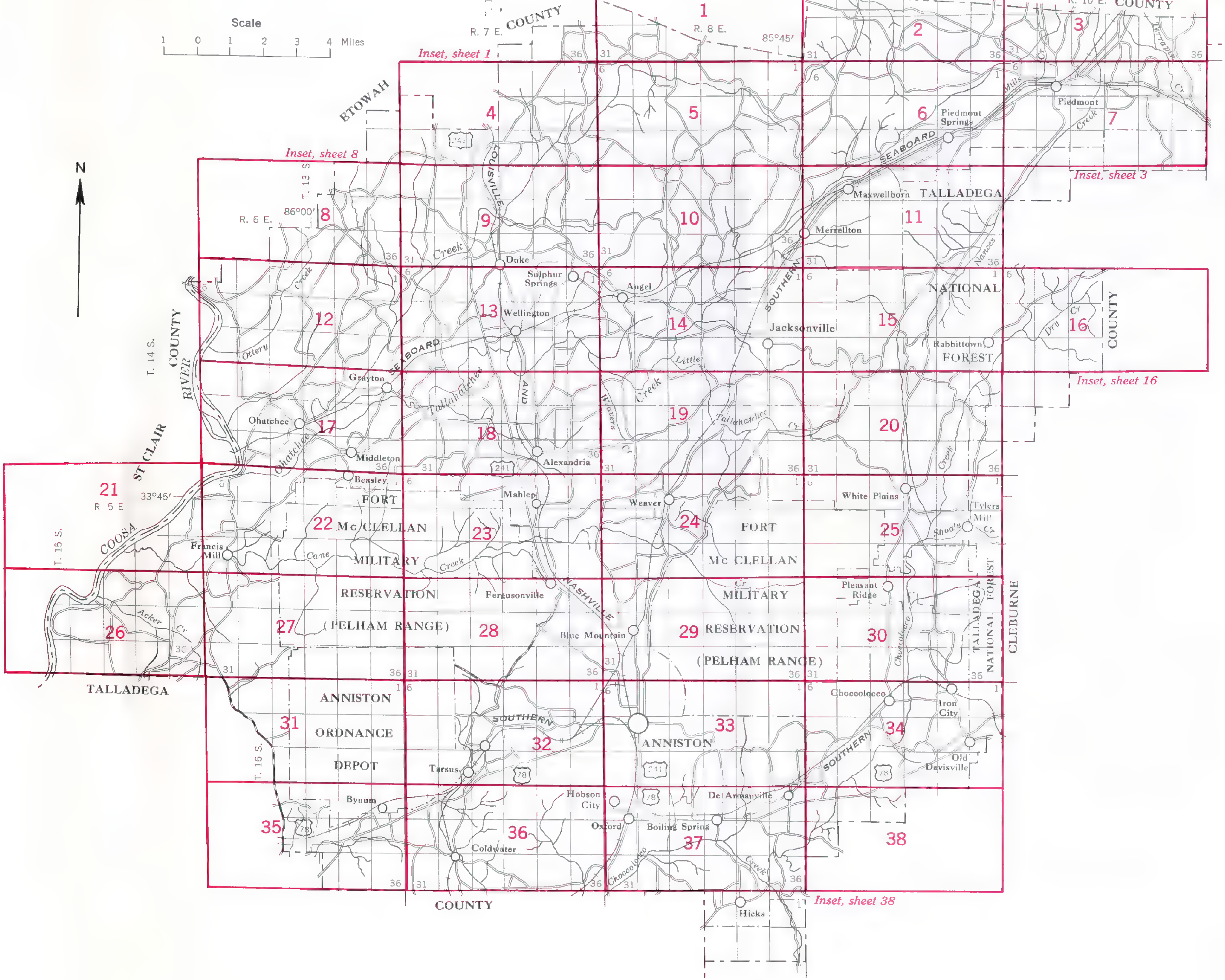
GENERAL SOIL MAP
CALHOUN COUNTY, ALABAMA



INDEX TO MAP SHEETS
CALHOUN COUNTY, ALABAMA



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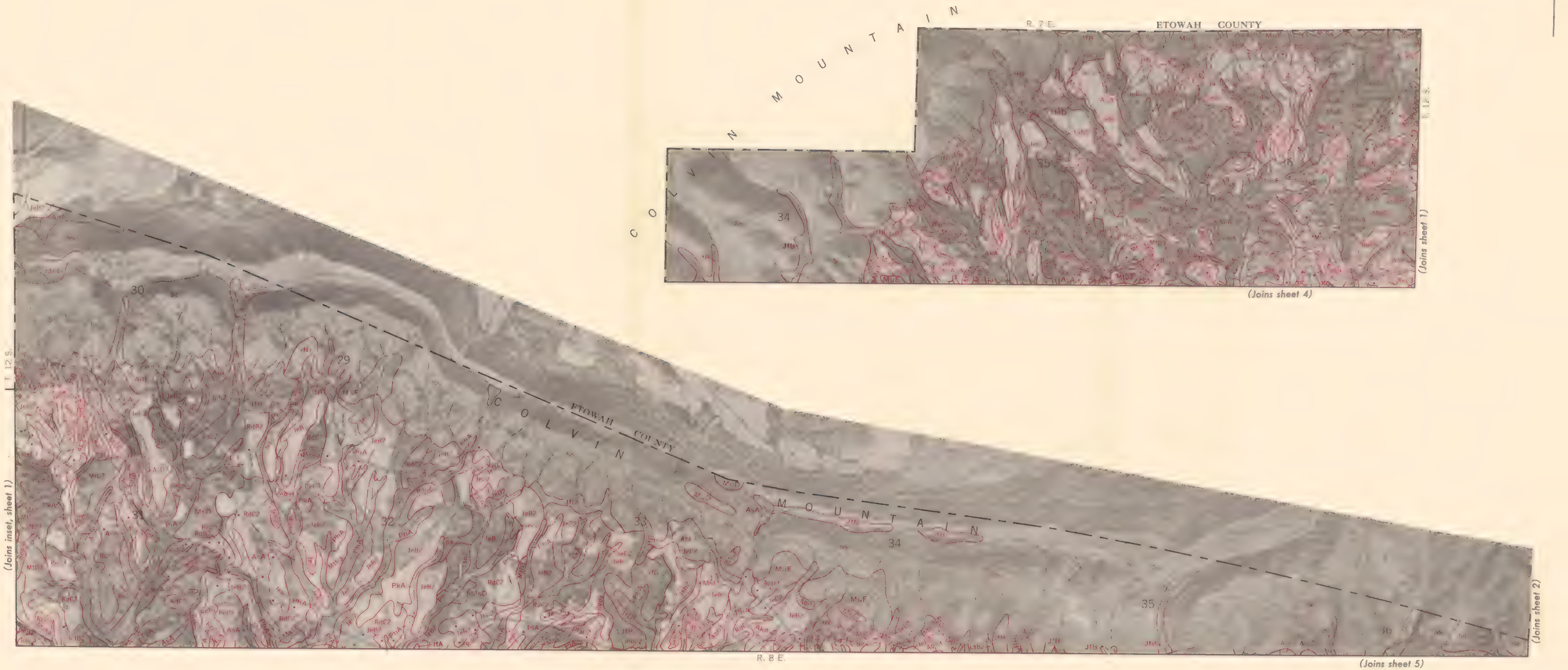
Range, township, and section corners shown on this map are indefinite.



0 ½ 1 Mile Scale 1:20 000 0 5000 Feet

10

(Joins sheet 5)

R. 8 E.

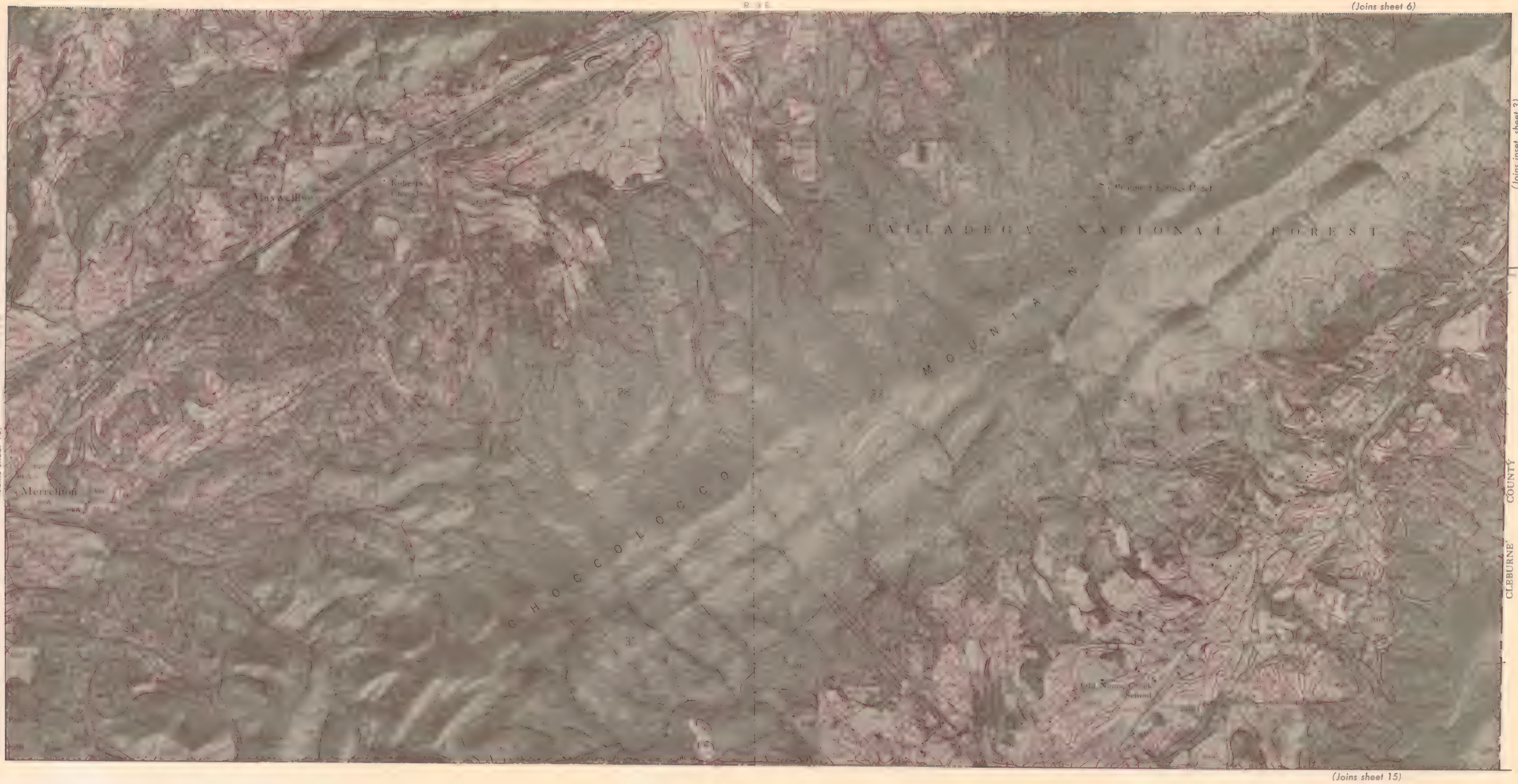
N

(Joins sheet 9)

(Joins sheet 11)

(Joins sheet 14)

0 1/2 1 Mile Scale 1:20 000 0 5000 Feet



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12

0 1/2 1 Mile Scale 1:20 000 0 5000 Feet

CALHOUN COUNTY, ALABAMA - SHEET NUMBER 13

R. 7 E.

(Joins sheet 9)

13

(Joins sheet 12)

(Joins sheet 14)

(Joins sheet 18)

Range, township, and section corners

compiled from aerial photographs flown in 1954

0 1/2 1 Mile Scale 1:20 000 5000 Feet

(14)

CALHOUN COUNTY, ALABAMA - SHEET NUMBER 14

(Joins sheet 10)

R. 8 E.

N

(Joins sheet 13)

(Joins sheet 15)

(Joins sheet 19)

0 ½ 1 Mile Scale 1:20 000 0 5000 Feet

(Joins sheet 11)

Range, township, and section corners shown on this map are indefinite.

(Joins sheet 14)

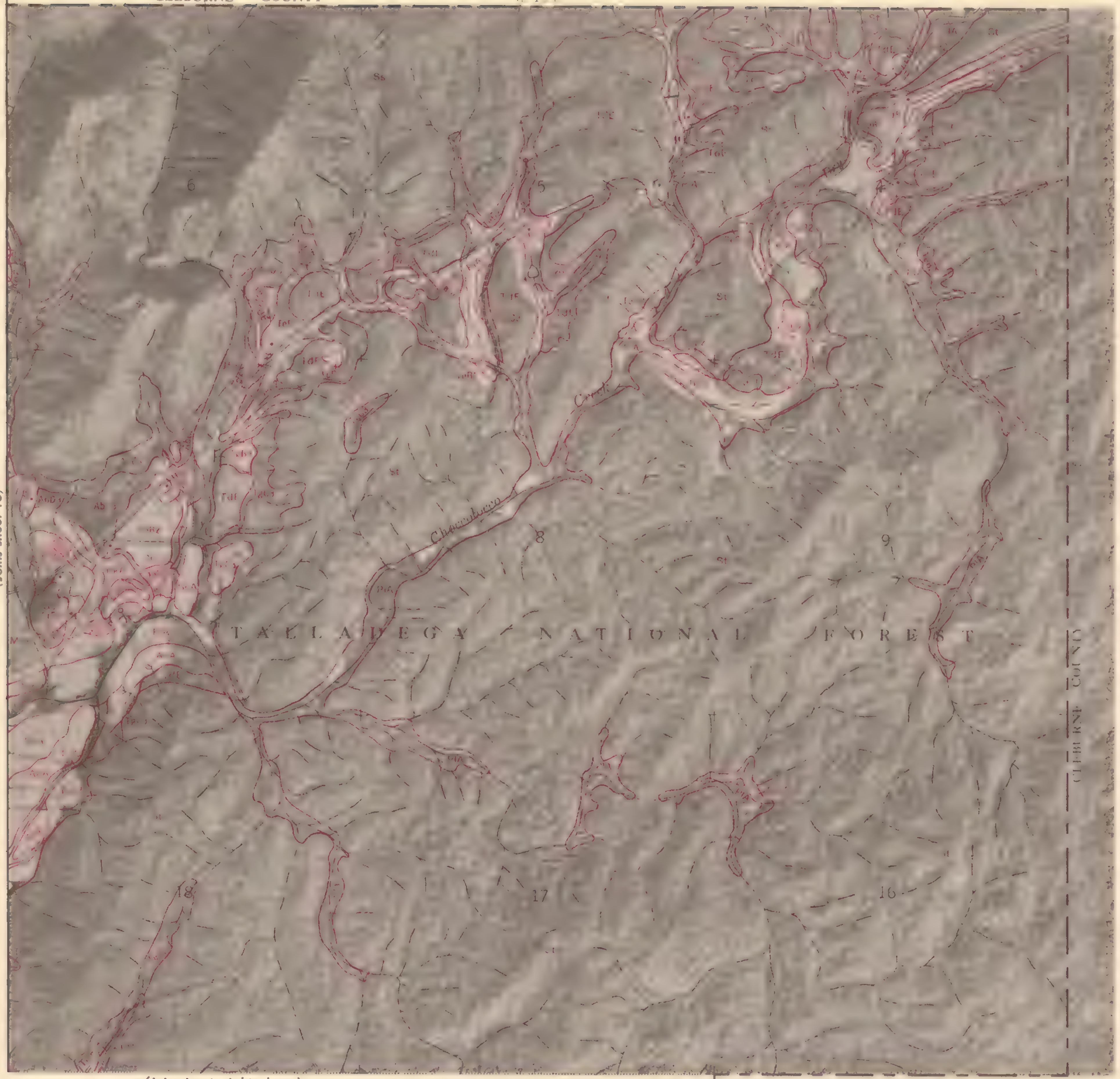
(Joins sheet 16)

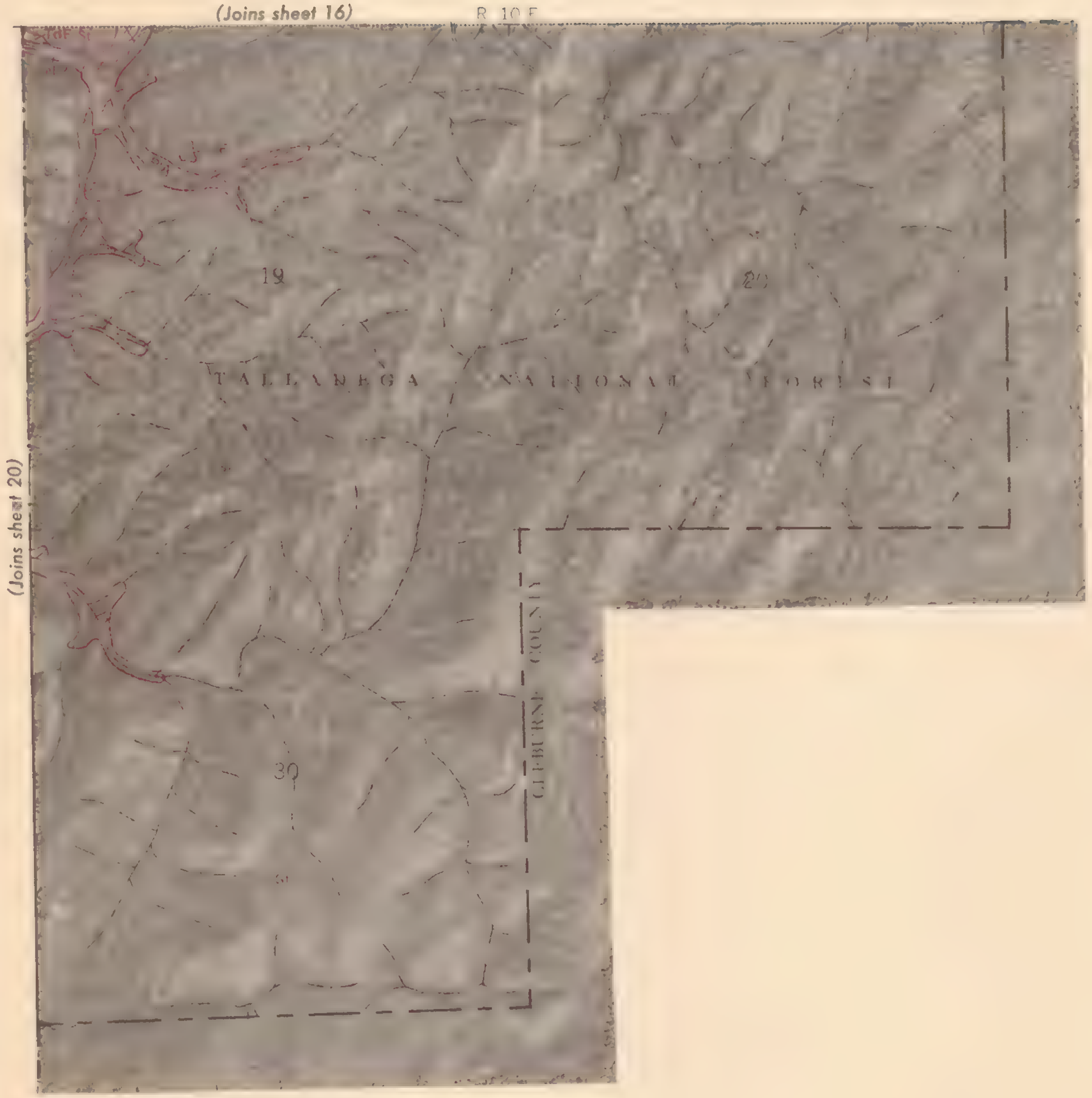
(Joins sheet 20)

0 ½ 1 Mile Scale 1:20 000 0 5000 Feet

16

N





0 ½ 1 Mile Scale 1:20 000 0 5000 Feet

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17

(Joins sheet 18)

(Joins sheet 22)

0 ½ 1 Mile Scale 1:20 000 0 5000 Feet

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(18)

(Joins sheet 13)

(Joins sheet 17)

(Joins sheet 19)

(Joins sheet 23)

Scale 1:20000

0 ½ 1 Mile

0 5000 Feet

(Joins sheet 14)

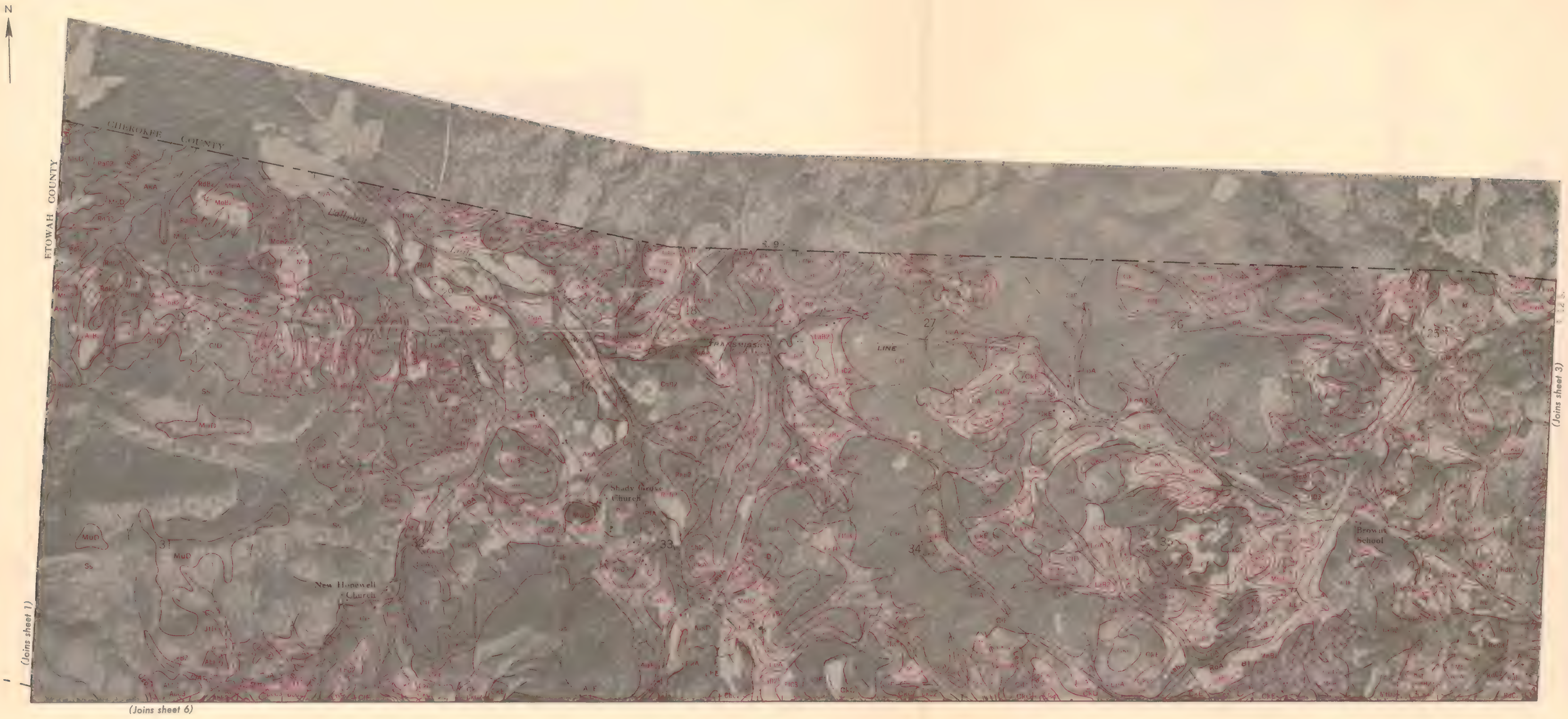
(Joins sheet 18)

(Joins sheet 20)

(Joins sheet 24)

0 ½ 1 Mile Scale 1:20 000 0 5000 Feet

(2)



0 ½ 1 Mile Scale 1:20 000 0 5000 Feet

20

CALHOUN COUNTY, ALABAMA - SHEET NUMBER 20

(Joins sheet 15)

N

(Joins sheet 19)

(Joins inset, sheet 16)

(Joins sheet 25)

0 ½ 1 Mile

Scale 1:20000

0 5000 Feet

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Range, township, and section corners shown on this map are indefinite.

0 1/2 1 Mile Scale 1:20 000 0 5000 Feet

CALHOUN COUNTY, ALABAMA · SHEET NUMBER 22

(Joins sheet 18)

23

(Joins sheet 22)

(Joins sheet 24)

(Joins sheet 28)

Range, township, and section corners shown on this map are indefinite.

0 1 Mile Scale 1:20 000 0 5000 Feet

24

(Joins sheet 19)

N

(Joins sheet 23)

(Joins sheet 25)

(Joins sheet 29)

0 ½ 1 Mile

Scale 1:20 000

0 5000 Feet

(Joins sheet 20)

Range, township, and section corners shown on this map are indefinite.

Scale 1:20000 — 0, 1/2, 1 Mile; 0, 5000 Feet


N
(Joins sheet 21)
R. 5 E.
COOSA RIVER
Mt Olive Church
(Joins sheet 27)
ST. CLAIR COUNTY
TALLADEGA COUNTY
0
1/2
1 Mile
Scale 1:20000
0
5000 Feet

27

0 ½ 1 Mile Scale 1:20 000 0 5000 Feet

CALHOUN COUNTY, ALABAMA - SHEET NUMBER 28

28

(Joins sheet 23)

R. 7 E.

(Joins sheet 27)

(Joins sheet 29)

(Joins sheet 32)

0 ½ 1 Mile Scale 1:20 000 0 5000 Feet

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Scale 1:20 000

0 ½ 1 Mile

0 5000 Feet

3

N

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Range, township, and section corners shown on this map are indefinite.

0 1/2 1 Mile

Scale 1:20 000

0 5000 Feet


30
(Joins sheet 25)
R. 9 E.
N
FORT McCLELLAN MILITARY RESERVATION
(PELHAM RANGE)
CHOCCOLOCCO MOUNTAIN
(Joins sheet 29)
CLEBURNE COUNTY
(Joins sheet 34)
0
1/2
1 Mile
Scale 1:20 000
0
5000 Feet

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Range, township, and section corners shown on this map are indefinite.

32


(Joins sheet 28)
N
(Joins sheet 31)
Eulaton
(Joins sheet 33)
(Joins sheet 36)
0
½
1 Mile
Scale 1:20 000
0
5000 Feet

R. 8 E.

(Joins sheet 29)

33

This is one of a set of maps prepared by the Soil Conservation Service, U. S. Department of Agriculture, for a soil survey report of this area. For information regarding the complete soil survey report, write the Soil Conservation Service, U. S. Department of Agriculture, Washington 25, D. C. This map

Range, township, and section corners shown on this map are indefinite.

(Joins sheet 32)

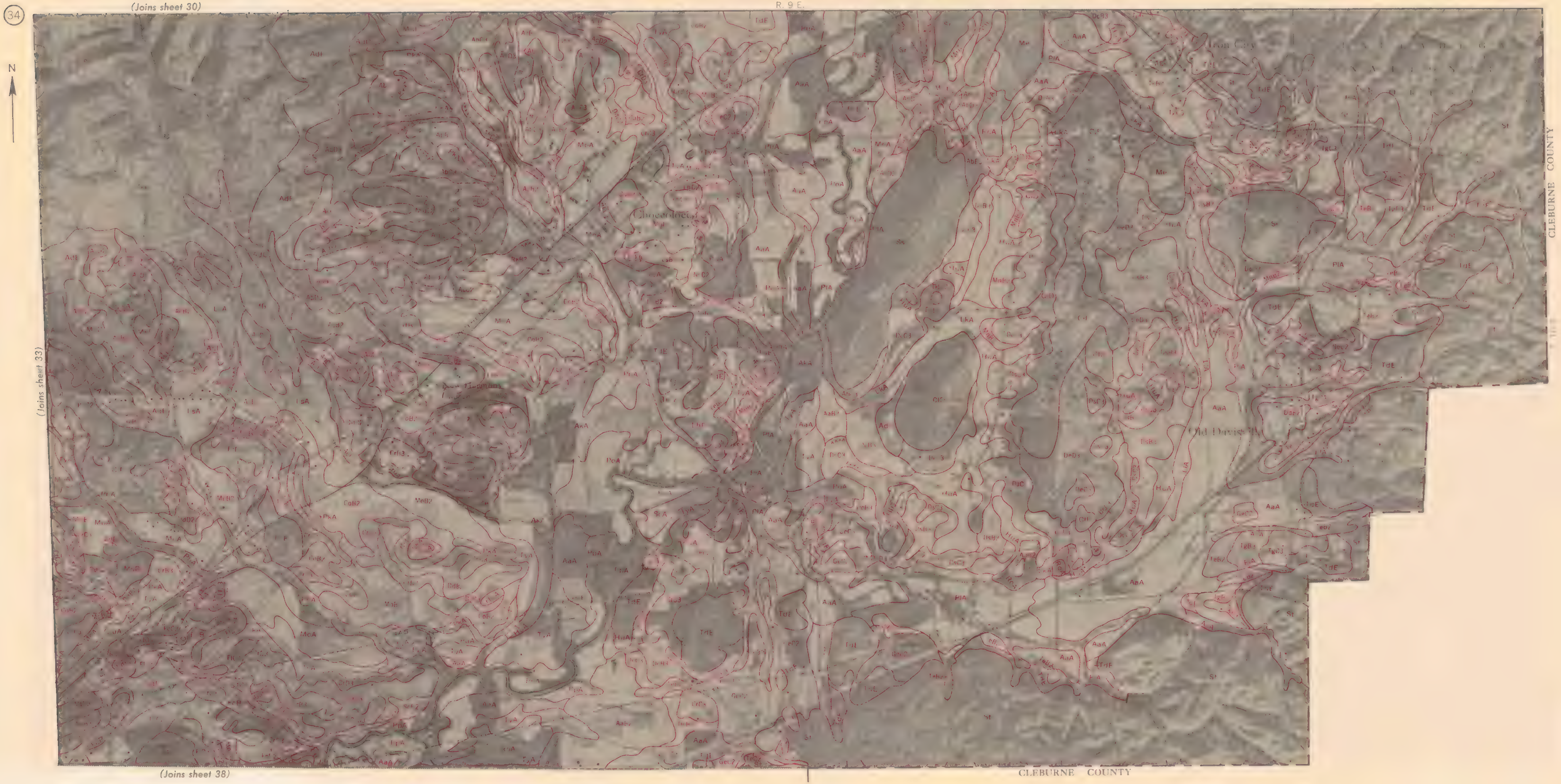
T. 16 S.

(Joins sheet 34)

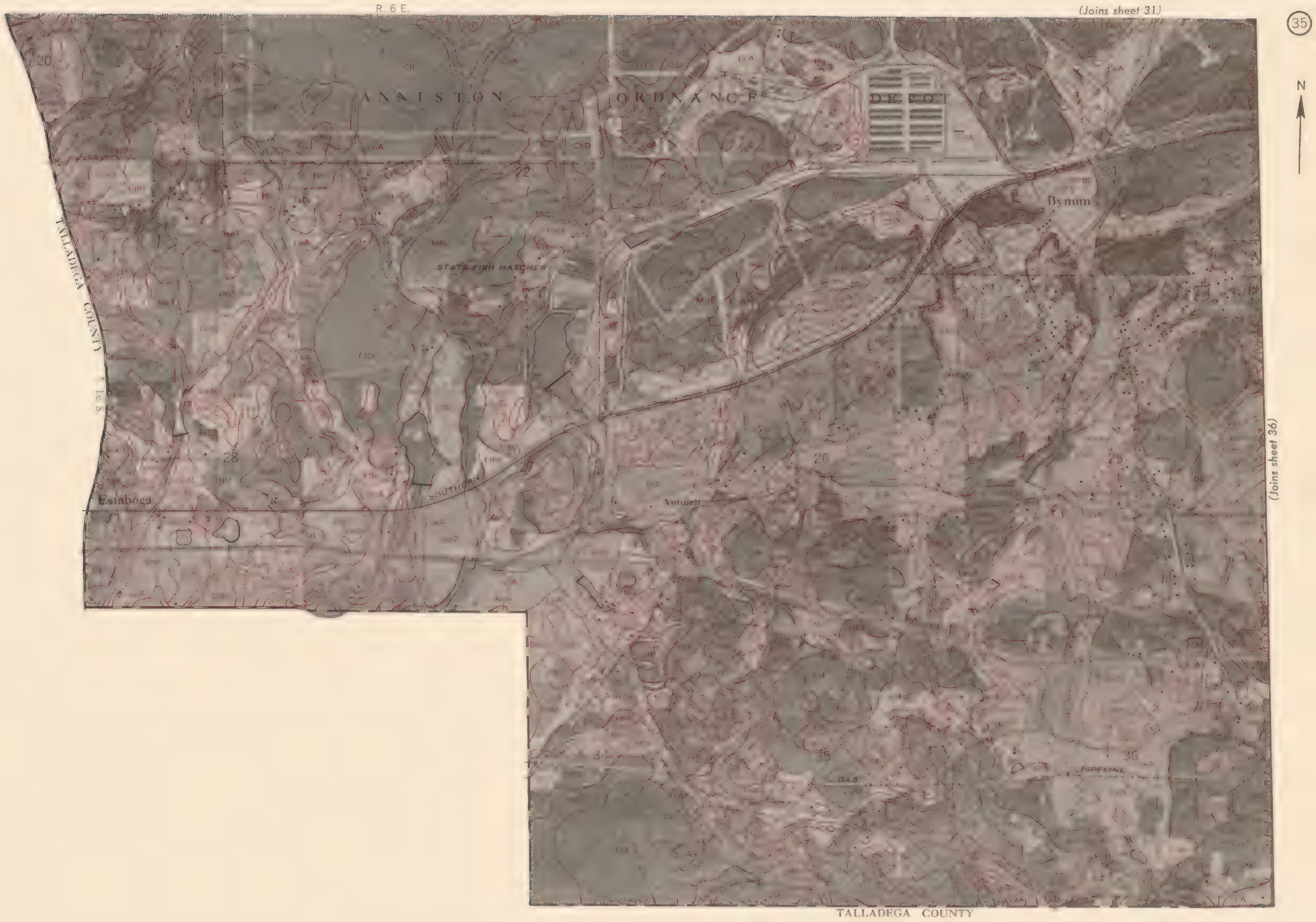
N

(Joins sheet 37)

0 ½ 1 Mile Scale 1:20000 0 5000 Feet

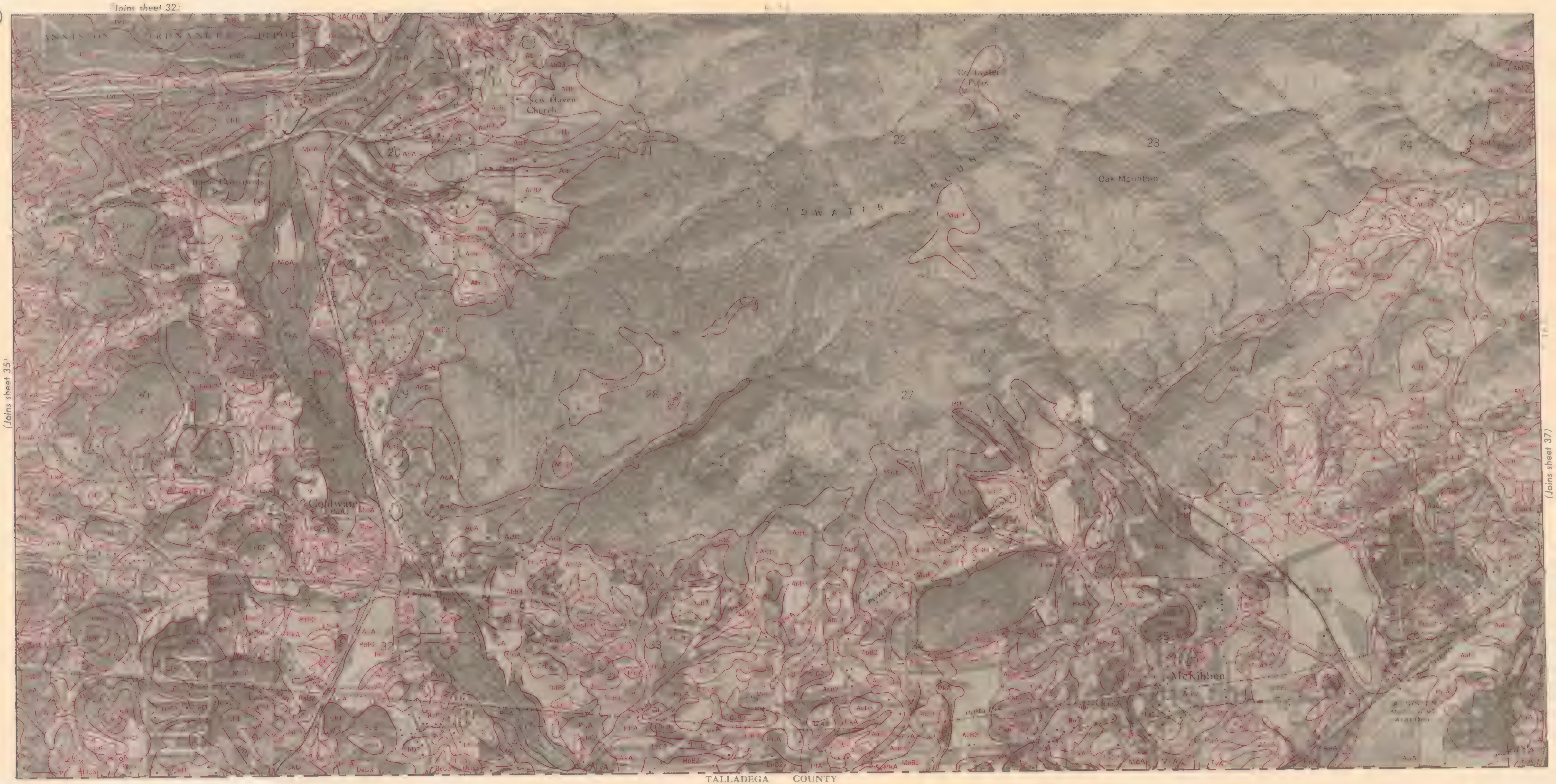


1 Mile Scale 1:20 000 0 5000 Feet

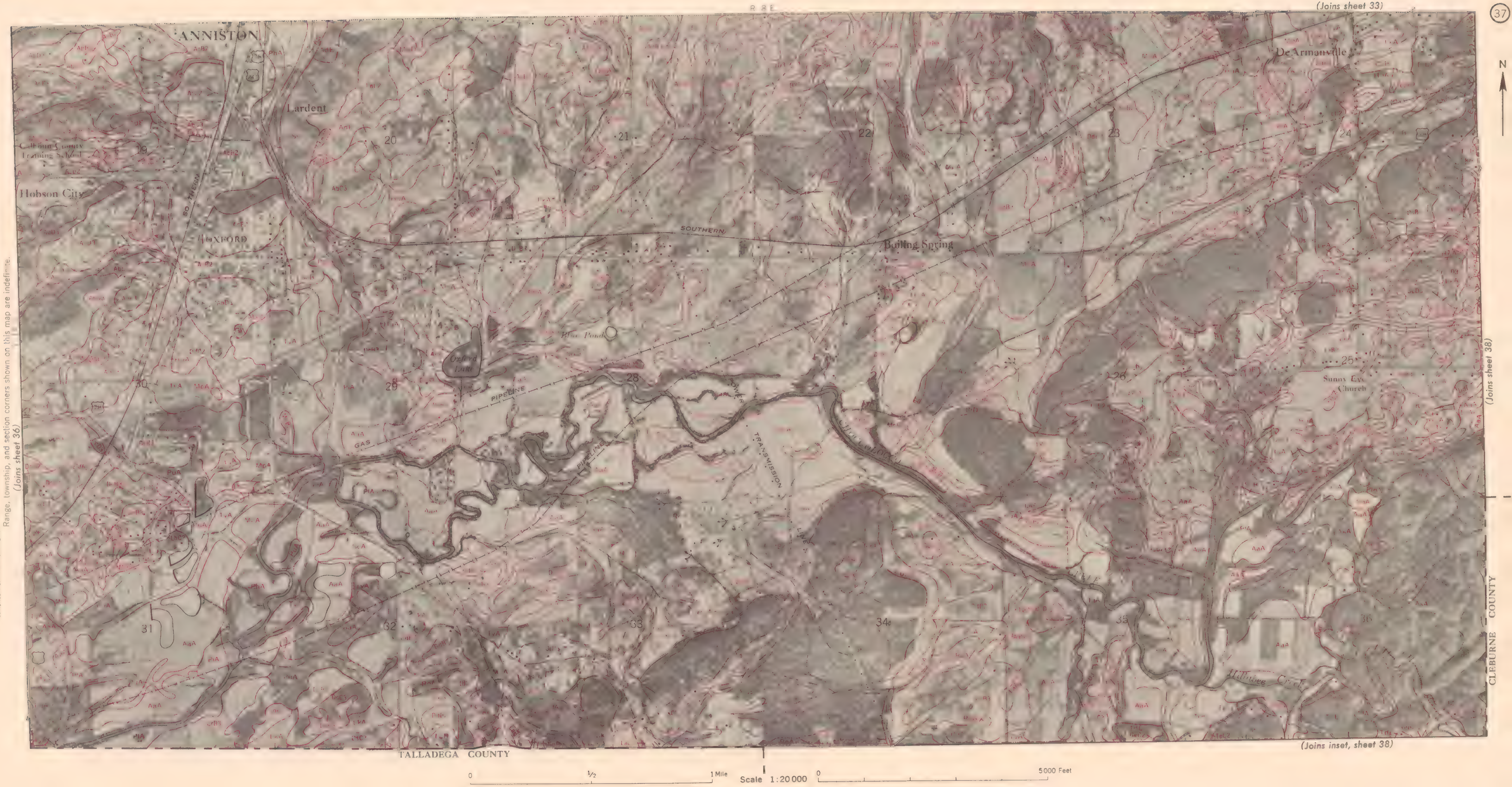


0 ½ 1 Mile Scale 1:20 000 0 5000 Feet

36



0 ½ 1 Mile Scale 1:20 000 0 5000 Feet



This is one of a set of maps prepared by the Soil Conservation Service, U. S. Department of Agriculture, for a soil survey report of this area. For information … D. C. This map compiled from aerial photographs flown in 1954.

Range, township, and section corners shown on this map are indefinite.

38

N

0 ½ 1 Mile Scale 1:20 000 0 5000 Feet

0 ½ 1 Mile Scale 1:20000 0 5000 Feet

(Joins sheet 1)

5

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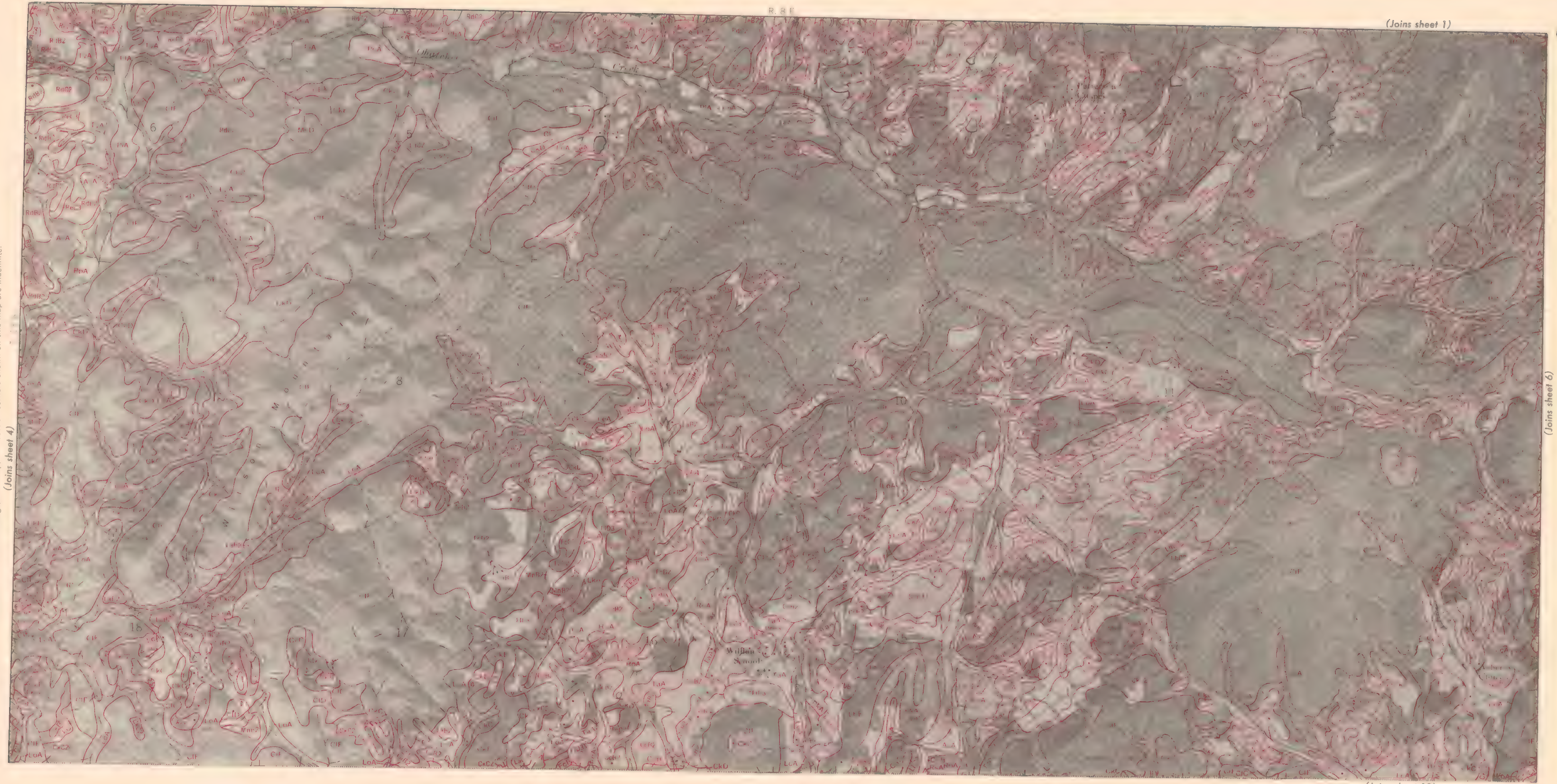
(Joins sheet 4)



(Joins sheet 6)

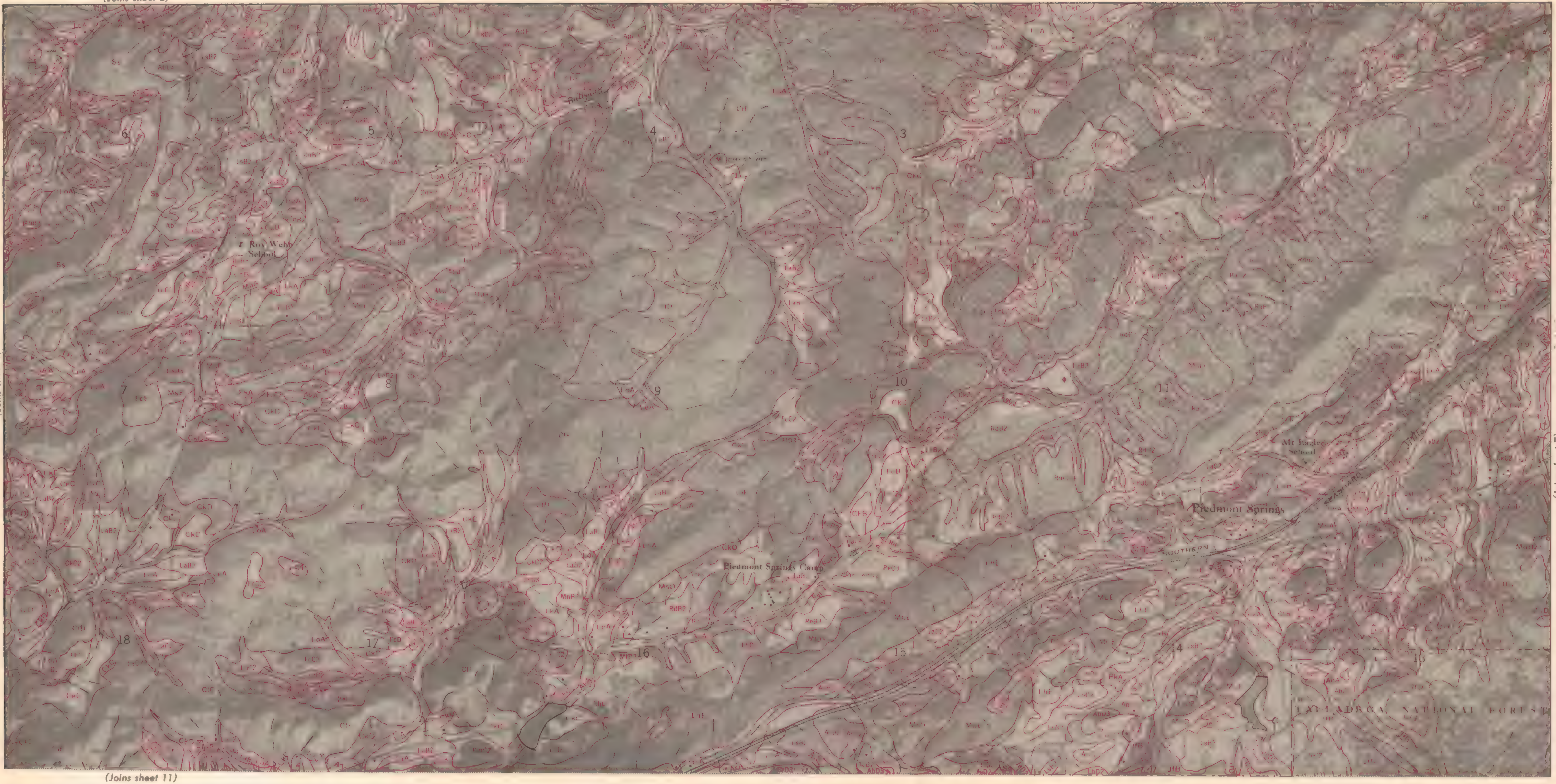
(Joins sheet 10)

0 — 1/2 — 1 Mile   Scale 1:20 000   0 — 5000 Feet

6

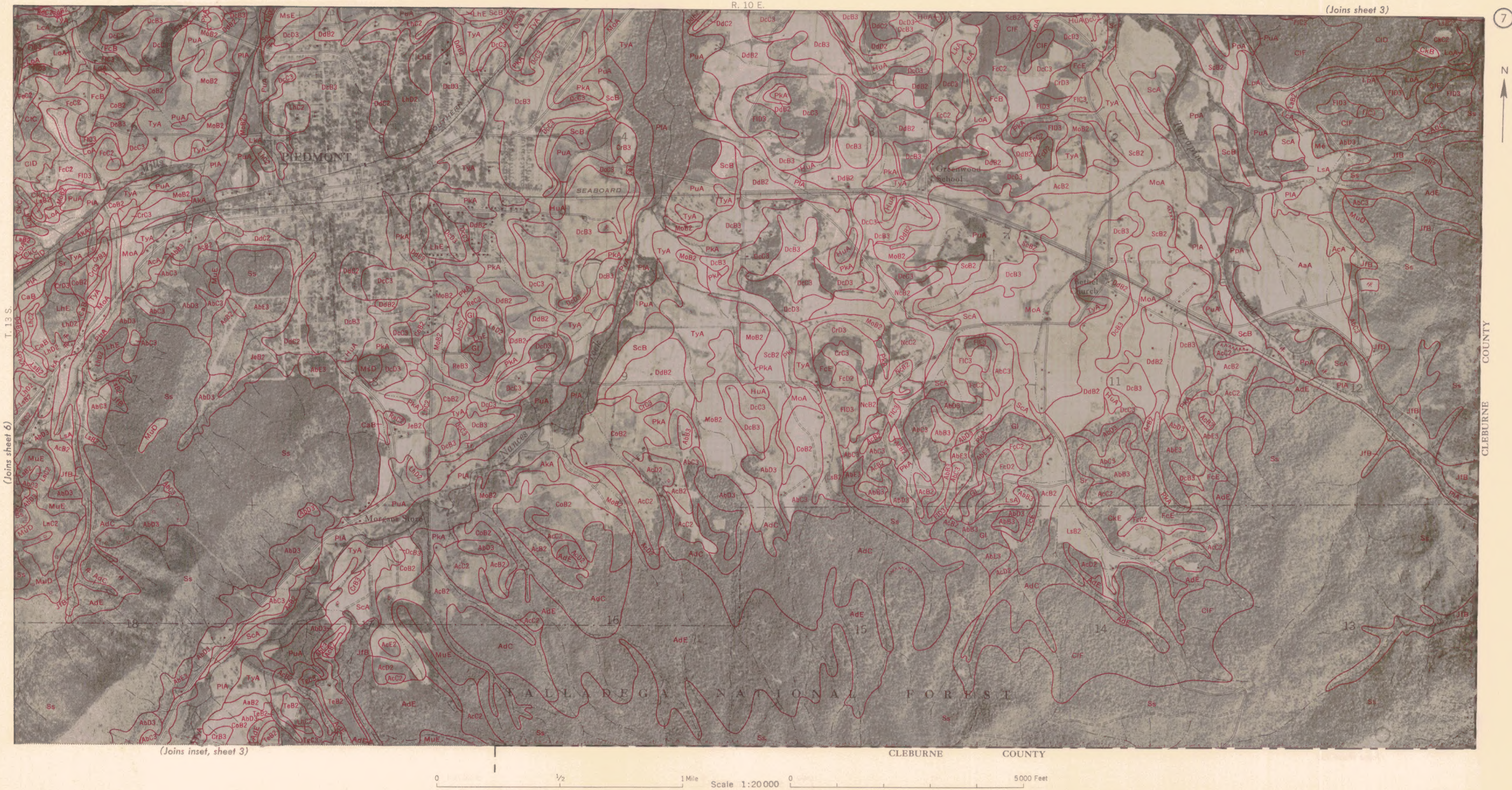
(Joins sheet 2)

R. 9 E.



(Joins sheet 11)

0 1/2 1 Mile Scale 1:20 000 0 5000 Feet



This is one of a set of maps prepared by the Soil Conservation Service, U. S. Department of Agriculture, for a soil survey report of this area. For information regarding the complete soil survey report, write the Soil Conservation Service, U. S. Department of Agriculture, Washington 25, D. C. This map compiled from aerial photographs flown in 1954.

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8
N
R. 6 E.
ETOWAH COUNTY
(Joins inset, sheet 8)
T. 13 S.
(Joins sheet 9)
(Joins sheet 4)
(Joins sheet 8)
(Joins sheet 12)
Greens Creek Mountain
Phillips Gap
Dodds Gap
Bethel Church
Ohatchee Creek
12
13
25
26
27
33
34
35
36
0
1/2
1 Mile
Scale 1:20 000
5 000 Feet

9

R. 7 E.

T. 13 S.

0 ½ 1 Mile Scale 1:20 000 0 5000 Feet

This is one of a set of maps prepared by the Soil Conservation Service, U. S. Department of Agriculture, for a soil survey report of this area. For information regarding the complete soil survey report, write the Soil Conservation Service, U. S. Department of Agriculture, Washington 25, D. C. This map compiled from aerial photographs flown in 1954.

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U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

CALHOUN COUNTY, ALABAMA

ALABAMA AGRICULTURAL EXPERIMENT STATION
ALABAMA DEPT. OF AGRICULTURE AND INDUSTRIES

SOIL LEGEND

The first letter in each soil symbol is the initial of the soil series name. If slope forms part of the soil name, a second capital letter shows the range of steepness. A number shows that the soil is named as eroded.

SYMBOL	NAME
AaA	Altavista and Masada silt loams, low terraces, 0 to 2 percent slopes
AaB2	Altavista and Masada silt loams, low terraces, 2 to 6 percent slopes, eroded
AbB3	Anniston gravelly clay loam, 2 to 6 percent slopes, severely eroded
AbC3	Anniston gravelly clay loam, 6 to 10 percent slopes, severely eroded
AbD3	Anniston gravelly clay loam, 10 to 15 percent slopes, severely eroded
AbE3	Anniston gravelly clay loam, 15 to 25 percent slopes, severely eroded
AcA	Anniston and Allen gravelly loams, 0 to 2 percent slopes
AcB2	Anniston and Allen gravelly loams, 2 to 6 percent slopes, eroded
AcC2	Anniston and Allen gravelly loams, 6 to 10 percent slopes, eroded
AcD2	Anniston and Allen gravelly loams, 10 to 15 percent slopes, eroded
AcE2	Anniston and Allen gravelly loams, 15 to 25 percent slopes, eroded
AdC	Anniston and Allen stony loams, 0 to 10 percent slopes
AdE	Anniston and Allen stony loams, 10 to 25 percent slopes
AkA	Atkins silt loam, 0 to 2 percent slopes
AsA	Atkins and Stendal soils, local alluvium, 0 to 2 percent slopes
CaB	Camp silt loam, 2 to 6 percent slopes
CbB2	Cane fine sandy loam, 2 to 6 percent slopes, eroded
CbC2	Cane fine sandy loam, 6 to 10 percent slopes, eroded
CcB	Captina silt loam, 0 to 6 percent slopes
CeB2	Captina silt loam, 2 to 6 percent slopes, eroded
CkB	Clarksville cherty silt loam, 2 to 6 percent slopes
CkC	Clarksville cherty silt loam, 6 to 10 percent slopes
CkC2	Clarksville cherty silt loam, 6 to 15 percent slopes, eroded
CkD	Clarksville cherty silt loam, 10 to 15 percent slopes
CkE	Clarksville cherty silt loam, 15 to 25 percent slopes
ClC	Clarksville-Fullerton stony loams, 5 to 10 percent slopes
ClD	Clarksville-Fullerton stony loams, 10 to 15 percent slopes
ClF	Clarksville-Fullerton stony loams, 15 to 40 percent slopes
CnB2	Conasauga silt loam, 2 to 6, percent slopes, eroded
CoB2	Cumberland gravelly loam, 2 to 6 percent slopes, eroded
CrB3	Cumberland gravelly clay loam, 2 to 6 percent slopes, severely eroded
CrC3	Cumberland gravelly clay loam, 6 to 10 percent slopes, severely eroded
CrD3	Cumberland gravelly clay loam, 10 to 25 percent slopes, severely eroded
DcB3	Decatur and Cumberland clay loams, 2 to 6 percent slopes, severely eroded
DcC3	Decatur and Cumberland clay loams, 6 to 10 percent slopes, severely eroded
DcD3	Decatur and Cumberland clay loams, 10 to 25 percent slopes, severely eroded
DdA	Decatur and Cumberland loams, 0 to 2 percent slopes
DdB2	Decatur and Cumberland loams, 2 to 6 percent slopes, eroded
DdC2	Decatur and Cumberland loams, 6 to 10 percent slopes, eroded
DdD2	Decatur and Cumberland loams, 10 to 25 percent slopes, eroded
DeC3	Dewey cherty silty clay loam, 6 to 10 percent slopes, severely eroded
DeD3	Dewey cherty silty clay loam, 10 to 15 percent slopes, severely eroded
DsB3	Dewey silty clay loam, 2 to 6 percent slopes, severely eroded
DsC3	Dewey silty clay loam, 6 to 10 percent slopes, severely eroded
DuA	Dunning silt loam, overwashed, 0 to 2 percent slopes
EnB2	Enders gravelly fine sandy loam, 2 to 6 percent slopes, eroded
EnC2	Enders gravelly fine sandy loam, 6 to 10 percent slopes, eroded
EnD	Enders gravelly fine sandy loam, 10 to 15 percent slopes
EtA	Etowah silt loam, 0 to 2 percent slopes
EtB2	Etowah silt loam, 2 to 6 percent slopes, eroded
FcB	Fullerton cherty silt loam, 2 to 5 percent slopes
FcC2	Fullerton cherty silt loam, 6 to 10 percent slopes, eroded
FcD2	Fullerton cherty silt loam, 10 to 15 percent slopes, eroded
FcE	Fullerton cherty silt loam, 15 to 25 percent slopes
FlC3	Fullerton cherty silty clay loam, 6 to 10 percent slopes, severely eroded
FlD3	Fullerton cherty silty clay loam, 10 to 15 percent slopes, severely eroded
FlE3	Fullerton cherty silty clay loam, 15 to 25 percent slopes, severely eroded
GeC2	Georgeville and Tate soils, 2 to 10 percent slopes, eroded
Gl	Gullied land
HoB2	Holston fine sandy loam, 2 to 6 percent slopes, eroded
HoC2	Holston fine sandy loam, 6 to 10 percent slopes, eroded
HuA	Huntington silt loam, local alluvium, 0 to 2 percent slopes
JeB2	Jefferson gravelly fine sandy loam, 2 to 6 percent slopes, eroded
JeC2	Jefferson gravelly fine sandy loam, 6 to 10 percent slopes, eroded
JeD2	Jefferson gravelly fine sandy loam, 10 to 15 percent slopes, eroded
JfB	Jefferson stony fine sandy loam, 0 to 10 percent slopes
JfD	Jefferson stony fine sandy loam, 10 to 25 percent slopes
LaB2	Landisburg cherty silt loam, 2 to 6 percent slopes, eroded
LaC2	Landisburg cherty silt loam, 6 to 10 percent slopes, eroded
LcA	Lee silt loam and cherty silt loam, 0 to 2 percent slopes
LeA	Lee silt loam, local alluvium, 0 to 2 percent slopes
LhC2	Lehew-Montevallo soils, 2 to 10 percent slopes, eroded
LhD2	Lehew-Montevallo soils, 10 to 15 percent slopes, eroded
LhE	Lehew-Montevallo soils, 15 to 30 percent slopes
LkA	Lindside silt loam, local alluvium, 0 to 2 percent slopes
LlA	Lindside and Newark silt loams, 0 to 2 percent slopes
LnC2	Linker gravelly fine sandy loam, 6 to 10 percent slopes, eroded
LoA	Lobelville cherty silt loam, local alluvium, 0 to 2 percent slopes
LpA	Lobelville silt loam and cherty silt loam, 0 to 2 percent slopes
LsA	Locust gravelly fine sandy loam, 0 to 2 percent slopes
LsB2	Locust gravelly fine sandy loam, 2 to 6 percent slopes, eroded
LsC2	Locust gravelly fine sandy loam, 6 to 10 percent slopes, eroded
MaA	Melvin silt loam, 0 to 2 percent slopes
Me	Mine wash
MnB2	Minvale cherty silt loam, 2 to 6 percent slopes, eroded
MoA	Monongahela loam, 0 to 2 percent slopes
MoB2	Monongahela loam, 2 to 6 percent slopes, eroded
MsD	Montevallo shaly silt loam, 10 to 15 percent slopes
MsE	Montevallo shaly silt loam, 15 to 40 percent slopes
MtC3	Montevallo shaly silty clay loam, 6 to 10 percent slopes, severely eroded
MtD3	Montevallo shaly silty clay loam, 10 to 40 percent slopes, severely eroded
MuD	Muskingum stony fine sandy loam, 10 to 15 percent slopes
MuE	Muskingum stony fine sandy loam, 15 to 25 percent slopes
NcB2	Nolichucky gravelly fine sandy loam, 2 to 6 percent slopes, eroded
NcC2	Nolichucky gravelly fine sandy loam, 6 to 10 percent slopes, eroded
PhA	Philo and Stendal fine sandy loams, 0 to 2 percent slopes
PlA	Philo and Stendal silt loams, 0 to 2 percent slopes
PkA	Philo and Stendal soils, local alluvium, 0 to 2 percent slopes
PoA	Pope fine sandy loam, 0 to 2 percent slopes
PpA	Pope silt loam, 0 to 2 percent slopes
PuA	Purdy silt loam, 0 to 2 percent slopes
RaB2	Rarden gravelly loam, shallow, 2 to 6 percent slopes, eroded
RaC2	Rarden gravelly loam, shallow, 6 to 10 percent slopes, eroded
RdB2	Rarden silt loam, shallow, 2 to 6 percent slopes, eroded
RdC2	Rarden silt loam, shallow, 6 to 10 percent slopes, eroded
ReB3	Rarden silty clay loam, shallow, 2 to 6 percent slopes, severely eroded
ReC3	Rarden silty clay loam, shallow, 6 to 10 percent slopes, severely eroded
RmC2	Rarden-Montevallo complex, 2 to 10 percent slopes, eroded
RoA	Robertsville silt loam, 0 to 2 percent slopes
RsA	Robertsville silt loam, overwashed, 0 to 2 percent slopes
ScA	Sequatchie fine sandy loam, 0 to 2 percent slopes
ScB	Sequatchie fine sandy loam, 2 to 6 percent slopes
ScB2	Sequatchie fine sandy loam, 2 to 6 percent slopes, eroded
SeB2	Sequatchie gravelly fine sandy loam, 2 to 6 percent slopes, eroded
Sr	Stony rough land, limestone
Ss	Stony rough land, sandstone
St	Stony rough land, slate
TaA	Taft silt loam, 0 to 2 percent slopes
TdE	Talladega soils, 10 to 40 percent slopes
TeB2	Tate gravelly silt loam, 2 to 6 percent slopes, eroded
TeC2	Tate gravelly silt loam, 6 to 10 percent slopes, eroded
TgB3	Tate gravelly silty clay loam, 2 to 6 percent slopes, severely eroded
TgC3	Tate gravelly silty clay loam, 6 to 10 percent slopes, severely eroded
Tr	Terrace escarpments
TyA	Tyler silt loam, 0 to 2 percent slopes

Soil map constructed 1960 by Cartographic Division, Soil Conservation Service, USDA, from 1954 aerial photographs. Controlled mosaic based on Alabama plane coordinate system, east zone, transverse Mercator projection, 1927 North American datum.

CONVENTIONAL SIGNS